Iowa State College Library, Ames, Iowa
JUL 21 1925
Forestry
SD
1
.V58

JUNE
1925

VETERINARY MEDICINE

4753 GRAND BOULEVARD, CHICAGO

IN THIS ISSUE

THE ESTROUS CYCLE IN THE COW
By H. S. MURPHEY

TOURING THE FAR WEST
By E. T. BAKER

THE HORSE FACTOR IN CITY TRUCKING
By MAJOR ELIHU CHURCH

DISEASES OF THE REPRODUCTIVE ORGANS OF THE HEN
By B. F. KAUPP and R. S. DEARSTYNE

ADRENALIN IN MILK FEVER
By N. E. PEIGH

RUMENOTOMY FOR THE RELIEF OF TRAUMATIC PERICARDITIS
By W. B. CHAPMAN

THE STOMACH TUBE IN AZOTURIA
By JOHN M. KERR

EQUINE PLASTIC SURGERY
By H. J. MAGENS

SWINE OBSTETRICS
By HARRY L. KIDD

TREATMENT FOR STRYCHNIN POISONING OF DOGS
By J. G. HORNING and A. J. McKEE
—and 40 Other Articles

Classified Advertisements, page 21

$4.00 the year

VOL. XX **No. 6**

Fort Dodge Service

—*what it means to you*

It's one thing to produce the highest quality Biologics and another to render the veterinarian a definite service on deliveries, diagnosis and co-operation.

Fort Dodge serves you both ways. The Biologics produced here are accepted everywhere as second to none. The organization back of them—with laboratories at Fort Dodge and branches in every important center—is behind the Veterinarian every minute with prompt and exacting service. Call on us any time, it will pay you.

FORT DODGE SERUM COMPANY
FORT DODGE, IOWA

FORT DODGE

WHOLE BLOOD ANTI-HOG CHOLERA SERUM
CLEAR HEATED ANTI-HOG CHOLERA SERUM
CLEAR CONCENTRATED HEATED ANTI-HOG CHOLERA SERUM
VIRULENT HOG CHOLERA VIRUS
VETERINARY BIOLOGICS AND PHARMACEUTICS

U. S. Veterinary License No. 112

Veterinary Medicine

VOL. XX JUNE, 1925 No. 6

PRIZE WINNERS FOR JUNE

1st Prize, N. E. Peigh, Hamlet, Ind.
2nd Prize, John M. Kerr, Washington, N. C.
3rd Prize, J. G. Horning and A. J. McKee, Houston, Texas.
4th Prize, Harry L. Kidd, Grand Meadow, Minn.

The number of manuscripts received for the June contest exceeded all previous records. The highest mark reached heretofore was in March, when 31 reports were submitted. This month fifty manuscripts were received from forty-seven different contributors and submitted to the judge.

Owing to the closing date, May 10th, being Sunday, the contest to all effects closed on the ninth. Eleven additional manuscripts were received on the 11th and therefore too late to be entered in the June contest. They will be held for entry in the July contest but were submitted by the authors for June, so there were really sixty-one reports sent in response to the announcement in the May issue. Let us have an even larger number for July.

Each of those submitting articles has been sent a copy of the new edition of "Veterinary Prescriptions" or a copy of Hall's "Diagnosis and Treatment of Internal Parasites," whichever book was preferred by the writer. The same extra inducement is to be repeated for July.

Dr. E. T. Baker of Moscow, Idaho, acted as judge of the contest. Dr. Baker is well known as one of the leading practitioners in the West, as an author of veterinary books and articles, and as a contributor to association programs. Besides his extensive activities as a practitioner, he has had considerable experience in newspaper and publication work and is amply qualified to judge literary matters as well as practical values:

The awards were as follows:

First prize: Fifteen dollars to Dr. N. E. Peigh, Hamlet, Ind., for his report on adrenalin in milk fever.

Second prize: Eight dollars to Dr. John M. Kerr, Washington, N. C., for his report on the use of the stomach tube in azoturia.

Third prize: A yearly subscription to Veterinary Medicine to Drs. J. G. Horning and A. J. McKee, Houston, Texas, for their discussion of the treatment for strychnin poisoning of dogs.

Fourth prize: Two dollars to Dr. Harry L. Kidd, Grand Meadow, Minn., for his discussion of swine obstetrics.

In placing these awards, Dr. Baker made the following comment on the manuscripts submitted:

"It has been a mighty tough job acting as referee in this contest, for so many of the case reports were exceedingly well written and of practical value. However, I finally decided upon those that would do the greatest good and help the general practitioner in his work.

"Because an article did not receive a prize is no indication that it was not of marked worth, but because its scope was more or less limited. For example, handling the monstrosity is the exception, while an ordinary dystocia case is common. Prolapse of the rectum is comparatively rare as compared to prolapse of the vagina or uterus. While reports dealing with these out of the ordinary cases are interesting, yet, to my mind, new and successful 'wrinkles' on the everyday cases, such as impactions, pneumonias, founders, wire cuts, milk fevers, retained placentae, etc., are eagerly read by the general practitioner, and of distemper, spaying, strychnin poisoning, etc., by the small animal practitioner.

"The article on mineral deficiency is particularly meritorious and deserves careful reading by every practitioner, but it is more general in character than a case report. Had the writer taken a specific case from his practice and given us these full details, I am sure he would have been among the very highest winners.

"To my notion, the contest is certainly open to all, for the judge can give no favors, even if he wanted to, with only the number of the article, instead of the author's name to go by."

The reports and discussions entered in the contest were as follows:

Delivery of Monster Calf, by E. F. Jardine, St. Kitts, B. W. I.

Torsion of the Uterus, by H. G. Stephenson, Independence, Kan.

Cesarean Section in a Cow, by H. G. Stephenson, Independence, Kan.

Adrenalin in Milk Fever, by N. E. Peigh, Hamlet, Ind.

Objectionable Odor of Cow's Breath and Milk, by J. H. Brown, Rich Square, N. C.

Hemorrhage in Bull Fed on Sweet Clover, by W. Fleenor, Fairmount, N. D.

Embryotomy in a Cow, by James A. Shuck, Danese, W. Va.

Cow Resents Restraint, by J. C. Freeman, Youngsville, N. C.

Mad Itch in Cattle, by G. G. Faber, Mitchell, S. D.

Treatment for Cystic Ovary, by R. F. Whitlock, Monett, Mo.

Operation for Flexion of Calf's Leg, by L. H. Allen, Albany, Wis.

Violin Strings in Teat Surgery, by T. E. Sillick, Neillsville, Wis.

Parturient Paresis or What? by A. S. Henhoeffer, Kitchener, Ont.

Atypical Case of Parturient Paresis, by D. C. Hancock, Mays, Ind.

Triple Torsion of the Uterus, by Chas. B. Skinner, New Berlin, N. Y.

Rumenotomy for the Relief of Traumatic Pericarditis, by W. B. Chapman, Powersville, Mo.

Treatment of Sterility, by C. R. Strange, Johnstown, Colo.

Dropsy of the Amnion with Complications, by F. M. McConnell, Litchfield, Mich.

Abnormal Opening in Skull of Heifer, by D. J. Halloran, Oconto, Wis.

Paralysis in a Cow, by H. E. Mulkey, Butler, Mo.

The Vulva Test in Tuberculosis of Cattle, by Paul F. Scott, New Market, Ind.

Mad Itch Not Caused by Bovisepticus, by David Smith, Shepherdsville, Ky.

Mineral Deficiency, by W. R. Morgan, Jefferstown, Ky.

Gastro-Enteritis from Moldy Ensilage, by Harry Greene, Brockport, N. Y.

Surgical Treatment of Prolapsed Rectum, by G. W. Rail, Rippey, Ia.

The Stomach Tube in Azoturia, by John M. Kerr, Washington, N. C.

A Case for Diagnosis, by C. R. Kinnison, Chillicothe, Mo.

Equine Plastic Surgery, by H. J. Magens, Stewartville, Minn.

The "Roaring" Operation, by G. A. Jones, Sedro-Woolley, Wash.

Rupture of the Colon in a Mare, by S. P. Holtz, West Point, Ia.

That Word "Colic," by Rembrandt Morgan, Winfield, W. Va.

Rupture of the Diaphragm, by Wesley D. McCoy, Cassopolis, Mich.

Leak Following Operation for Umbilical Hernia, by A. S. Henhoeffer, Kitchener, Ont.

Fractured Lower Mandible in a Mule, by Fred H. Steele, Huntsville, Ala.

Treatment of Colics in Louisiana, by H. A. Burton, Alexandria, La.

Obstruction of the Rectum, by H. J. Davis, Aylmer West, Ont.

Obscure Lameness in a Mule, by R. H. Herron, Bainbridge, Ga.

Prolapse of Uterus and Rectum in a Sow, by P. K. Walter, Thorndale, Ont.

Swine Obstetrics, by Harry L. Kidd, Grand Meadow, Minn.

Treatment for Strychnin Poisoning in Dogs, by J. G. Horning and A. J. McKee, Houston, Texas.

Anesthesia in Feline Oophorectomy, by Chas. J. Gruber, Ft. Wayne, Ind.

Filaria Immitis in Dogs, by W. J. Ratigan, New Orleans, La.

Spaying a Male Cat, by U. E. Marney, San Antonio, Texas.

Filaria Immitis in Dog, by A. R. Rowat, Honokaa, Hawaii.

Tuberculosis in a Dog, by E. A. Ehmer, Seattle, Wash.

Tumors of the Vagina in Bitches, by Chas. J. Gruber, Ft. Wayne, Ind.

Practical Items, by H. G. Stephenson, Independence, Kan.

Conflagration Following Use of Ethereal Solutions, by W. P. Bossenberger, Williams, Ia.

A Practitioner's Outlook, by O. W. Johnson, Davenport, Wash.

Office Practice, by S. R. Howard, Hillsboro, Ohio.

Such of these articles as do not appear in this issue will be published later.

The following reports were received too late for the June contest but will be entered in July:

An Obstetrical Report, by Marvin E. Hartley, Raymond, Ohio.

Tetanus in a Cow, by J. C. Mullineaux, Hagerstown, Md.

Infected Udder, by L. L. Beck, Pattonsburg, Mo.

Tuberculosis in a Cow, by F. G. Whitehead, Santa Rosa, Cal.

Autointoxication on Green Wheat Pasture, by D. A. Yandell, St. Francis, Kan.

Castration of Colts in the Standing Position, by Ralph W. Balkam, Springfield, Mass.

Azoturia, by J. C. Green, Bronson, Kan.

Gastro-Intestinal Catarrh in a Horse, by Geo. L. Clark, Columbia City, Ind.

Hypodermoclysis in Canine Practice, by J. G. Horning and A. J. McKee, Houston, Texas.

Cesarean Section in a Bitch, by C. L. Sanders, Dayton, Ohio.

Impaction of Dog's Stomach, by O. F. Foley, Bridgewater, Va.

Since the beginning of the contest in January to date, 161 articles have been received from 119 contributors, distributed through thirty-six states, the territory of Hawaii, three Canadian provinces and the British West Indies.

CONDITIONS OF THE CONTEST

For the July contest, in addition to the regular prizes, we are renewing our offer of a copy of the new second edition of "Veterinary Prescriptions," or a copy of the new edition of Hall's "Diagnosis and Treatment of Internal Parasites" to everyone submitting a report or discussion. The new edition of "Veterinary Prescriptions" contains more than three times the material published in the first edition. Over 300 prescriptions, formulas and treatments are given, including the favorite prescriptions of some fifty prominent practitioners, also the formulas of some 45 proprietary veterinary preparations. The volume contains 80 pages, substantially bound, with table of contents and index facilitating ready reference. You do not have to wait for the decision of the judge to get either the "Prescriptions" or Hall's "Parasites," whichever you prefer. The receipt of your report for the July contest will entitle you to a copy, which will be mailed at once.

For the benefit of those who may not be familiar with the terms of the contest, the following initial announcement, which appeared in the December, 1924, issue, is reproduced:

An experience of twenty years in veterinary journalism has convinced the editor of Veterinary Medicine that the most valuable service this publication can render its subscribers is to facilitate the exchange of ideas, opinions, experiences, and discoveries among its readers. A veterinarian has only his ability to give in exchange for his living; the more he increases his ability by adding to his store of information, the more he has to sell, and the more he can get for it.

Veterinary Medicine for nearly a score of years has stood at the head of the list of all veterinary publications in the world in the number of experiences (case reports) of its readers that it has published. During most of these years, it has published, by actual count, more of these experiences than all other veterinary journals published in English combined.

So the publishers are not speaking without a knowledge of the facts or wide experience when they discuss the importance of this type of discussions.

The plan of awarding premiums to veterinarians for case reports submitted for publication with a view to inducing more veterinarians to contribute them is original with Dr. J. R. Mohler. The suggestion that this be done was made while he was editor of the Journal of the American Veterinary Medical Association. In putting the plan into effect, Veterinary Medicine, as usual, is first.

$300 in Cash Prizes

To stimulate an even greater interest among its readers in reporting their veterinary experiences for the benefit of others in the profession, Veterinary Medicine will give during 1925, $300.00 in cash prizes; $48.00 in subscription prizes, and an undetermined amount in other prizes, for case reports or other discussions of merit submitted for publication, the conditions of the award being—

Twelve first prizes of $15.00, one each month, for the most valuable discussion published.

Twelve second prizes of $8.00, one each month, for the second most valuable discussion published during the month.

Twelve yearly subscriptions to Veterinary Medicine, one each month for the third prize.

Twelve fourth prizes of $2.00, one each month.

All manuscripts submitted in this contest are to become the property of Veterinary Medicine; but any not published will be released and returned to the writers on request. The closing date of the contest for each month will be on the 10th of the preceding month.

The awarding of prizes will be done by competent judges not connected with Veterinary Medicine. Different judges will pass upon the manuscripts for each month. Any writer having won two first, two second or two third prizes, will be eliminated from the competition for that particular prize during the remainder of the year.

The scope of discussions that may be entered in this contest is very wide and rather difficult

to define. In general, it includes what is commonly referred to as "case reports," "clinical notes," "autopsy findings," "useful contrivances in practice," "helpful hints," "professional problems," etc. For the present minimal and maximal limits of 200 to 2,000 words will be set upon manuscripts admissible to this contest.

Papers detailing research work for which the writer is paid from public funds or general papers read at association meetings or material published elsewhere (except translations from foreign languages) will not be admissible to the contest.

We urge readers to act at once. Write up and send in your interesting experiences of the past season while the details are still fresh in your memory. There is no limit to the number of manuscripts you may submit, only the provision that you may not win the same prize more than twice, except the fourth. There are more than fifty prizes available.

Your greatest reward will be the satisfaction of having contributed to the general fund of professional information and helped others. Second in value to you will be the credit and prestige accruing from the publication of your manuscript. And third is the more than $500.00 worth of cash and other prizes to strive for.

HOG-SANITATION SYSTEM GROWS IN POPULARITY

That the system of swine sanitation originated in the United States Department of Agriculture a few years ago is saving hog raisers large numbers of pigs and much money is shown by reports coming in continuously from various parts of the Middle West. Illinois, where the system was first tried out in McLean County, has been taking up this new method of handling sows and young pigs with a great deal of energy, and the results obtained no doubt will stimulate increasing numbers of farmers to raise pigs under sanitary precautions which will keep them free of worms.

This spring 500 farmers in 57 Illinois counties gave all the pigs farrowed a good start by having them come in clean farrowing houses after the sows had been thoroughly scrubbed.

At the experiment station farm at Urbana, Ill., a lot of sanitation pigs gained 35 pounds each while others allowed to run in old hog lots where they picked up worm eggs gained only 18 pounds. Dr. H. B. Raffensperger, of Chicago, Ill., representative of the Bureau of Animal Industry, United States Department of Agriculture, reports a lot of sanitation hogs that reached a weight of 218 pounds, while others frequenting an old hog lot grew to only 162 pounds. In this case the sanitation method increased the size of the pigs 35 per cent. Hundreds of farmers in various parts of the State have reported similar and even greater gains.

The method is not complicated and, as one Illinois farmer expressed it, once you are fixed for handling hogs in this way it is the easiest way to raise pigs. Briefly, all that is necessary is to have the pigs farrowed in a pen that has been thoroughly cleaned with lye and hot water, from sows that have been thoroughly scrubbed before the pigs are born. From this point on the pigs must be handled so as not to be brought in contact with old hog-lot soil polluted with worm eggs. They should be moved to clean pastures and kept away from contact with other hogs until they are 4 months of age and have a good enough start to resist any worm infection that may come later.

CHANGES IN MEDICAL EDUCATION IN TWENTY-FIVE YEARS

In 1900 there were 160 medical colleges in the United States. The requirements for graduation were, an age of 21 years and three years' attendance at a medical college. Entrance requirements now include two years of college study, and graduation requires five years of medical instruction, including one year in a hospital. The colleges now number 80.

EASTERN STATES T. B. CONFERENCE

The sixth annual Eastern States conference on the eradication of tuberculosis of livestock will be held in Providence, Rhode Island, June 16th and 17th. The states concerned are New York, Pennsylvania, Maryland, New Jersey, Delaware, and all the New England states.

AUSTRALIAN VETERINARY JOURNAL

The first number of The Journal of the Australian Veterinary Association, bearing the date line of March, 1925, has made its appearance. It is the official organ of the association and will be published quarterly. The publication is supplied free of charge to members, the subscription price to non-members being ten shillings ($2.40) a year. The first issue consists of 32 pages. M. Henry is editor, and I. Clunies Ross, business manager.

The Oklahoma State Board of Veterinary Medical Examiners will hold an examination at the Capitol Building, Oklahoma City, June 29th and 30th. The Secretary of the Board is Dr. D. W. Gerber, 116 Seventh Ave., N. W., Ardmore, Okla.

The Estrous Cycle In The Cow*

By H. S. Murphey (fifth report), Department of Anatomy
Iowa State College, Ames, Iowa

A good many years ago we became interested in the problem of the anatomy of the genital organs of the cow. Our first study was made on the "red bodies" of the ovary. Some time after this (in 1916) Stockard and Papanicolaou gave us the first method of real value in the study of the estrous cycle, using the guinea pig. At this time one of my assistants, Dr. E. F. Hewitt, was beginning to work on the ovary, but we could not get organized to pursue our studies in the ox on account of our transfer from the Department of Anatomy to the clinic, so that it was practically two years after the war period, with our return to anatomy, before we found time to continue the study of the genitalia of the cow.

A great impetus was given to our work by an organized study of the whole problem of sterility by the Research Department, Departments of Pathology, Medicine, Surgery and Anatomy of Iowa State College—each working independently but co-ordinately. Our part of the problem relates both to the anatomy and physiology of the genitalia of all domestic animals.

Practically nothing was known of either the anatomy or physiology of the genitalia of the ox, so that while clinicians had accomplished much, further progress was impossible until an extensive study leading to a definite end, could be completed, the facts gained classified and made available to the practitioners in the field. It also became evident that a new classification of sterility was necessary; that certain types of "functional sterility" could be ascribed to definite preventable, and treatable conditions, thus saving many so-called hopeless non-breeders by the experienced sterility workers. **But most important of all, our results make it possible for veterinarians to acquire a proper foundation for successful sterility work in their own practice and to avoid the pitfalls of their predecessors.**

We have had considerable help from our assistants and co-operation from other members of the faculty in collecting the material. Our methods in part have been published, step by step, with our papers. Several methods of studying the estrous cycle have been used and will be briefly discussed.

We first began to study the behavior of the animal and the external genitalia by observation and the use of the glass speculum. We found that there is a regular secretory cycle which may be studied macroscopically and that the anatomical changes of the vestibule, vagina and cervix are characteristic. Our first observation of great clinical importance was the swelling of the cervix with the protrusion of some of its folds into the vagina in pro-estrum. It is our belief that many cases have been treated for pathological conditions which showed merely the normal swelling of heat. If we go back a step further, I might say that we attempted to use the usual vaginal speculum but had to give it up on account of the inflammatory reaction and especially the terrific leucocytic exudation. That led us to the development of the glass speculum and also to the use of a decoction of slippery elm bark as a lubricant. We are firmly convinced that the glass speculum, or a similar tubular speculum, is an absolute necessity in the examination of the genitalia of the cow. Our colleagues on the clinic staff constantly use the speculum to determine the actual condition. With the old method of using the speculum and retracting forceps, all animals showed an inflammatory reaction, and many workers were unable to distinguish between **that which was present and that which they had produced.**

We also found that one of the external manifestations was a dropping at the lumbo-sacral articulation. We have described this as the "attitude of heat" and have found it to be as constant as the nervous manifestations such as uneasiness, bawling, mounting, etc. In studying the secretions, we found that in pro-estrum there was a marked secretion of clear mucus from the cervix and anterior portion of the vagina which continued on through heat and gradually changed, in post-estrum, to a flocculent mucus. These flocculi in the beginning are white and may be found either in flakes or in strings. They consist of desquamated epithelial cells from the wall of the vagina. In post-estrum the cohesiveness of the mucus is lessened so that the strands can not be pulled out as long as in the first stages.

And now a second change or third condition becomes manifest. Leucocytes migrate through the wall of the vagina, mix with the secretion

*Given at the Wisconsin Short Course for Veterinarians, Jan. 28, 1925.

and change its character to a gummy consistency with a cloudy appearance. Along with this migration of the leucocytes there is a heavy outpouring of lymph from the vaginal wall which helps to thin the secretion. By the old methods of examination, about all that was noted in the change of the genital organs during heat was the congestion phenomena. We have added these other things to the congestion phenomena. This exudate, which is purely physiological, differs markedly from any pathological exudates which we have had an opportunity to study. This distinction is not made in the literature but you find this normal secretion described as an inflammatory exudate. This last phase of the secretion, marked by the digestion of the vaginal content and the large amount of lymph, is coincident with an emptying of the secretions of the body and horns of the uterus into the vagina. In the marked cases of heat this secretion from the uterus contains red blood cells which we now know come from petechiae at the cotyledons due to a desquamation of the surface epithelium. At this same time ovulation takes place.

The palpation per rectum during the secretory stage reveals an enlarged uterus due to physiological congestion, edema, and the secretory content and while it has a characteristic turgid feel that may be described as erect, it is still soft to the touch, pliable and freely movable. It is not difficult to distinguish the normal uterus during this stage from the following:

1. The quick developing, erect uterus frequently observed during manipulation;
2. The enlarged, doughy, atonic uterus;
3. The enlargements found in different types of pyometra;
4. The enlarged, fibrous uterus;
5. The enlarged, pregnant uterus.

It has been possible by rectal palpation to follow the changes in the ovary very accurately. We have stayed with these cows days at a time, making examinations from two to four or six hours apart. Later we will give you another method which we have used extensively which confirms some of the things that we have been able to palpate in the ovary.

We have found that ovulation takes place between 30 and 65 hours after the onset of heat in cows that have not been bred. There is a great variation in the size and feel of follicles. The latter may begin to enlarge as early as 8 or 9 days after heat, develop gradually with a terminal rapid growth. On the other hand they may not be detected until the 18th or 19th day. The follicles which rupture are usually 16 to 19 m.m. but may be as small as 10 m.m. It is often possible to find two, three or four follicles and to be unable to distinguish which one is the maturing follicle until it has actually ruptured. The others then become atretic. We have found that follicles may even partially develop and regress between heat periods.

The developing corpus luteum can be distinctly located 24 to 36 hours after ovulation, then developing rapidly until nine days after heat. Up to this time it is soft to the touch. About the eleventh day it becomes firmer, probably due to the growth of connective tissue and the cessation of the marked hyperemia which is present during its growth. There is no detectable decrease in size until the 19th day. The decrease is rapid at first, then slower and can generally be followed for 10 or 11 days. It should be noted here of course, that **the next corpus luteum may come up in the same ovary or in the opposite ovary.** After ovulation this one becomes corpus luteum II which, as previously stated, may be followed for a few days, even until it is 30 days old. The new one (C. L. I) would then be from 7 to 9 days of age. There is no uniformity in the size of the follicle which ruptures or the size of the corpus luteum which develops following rupture in successive estrous periods of the same individual. Spontaneous ovulation always follows a heat period. It never takes place at any other time in the cycle.

It might be well to state at this time that normally the cavity of the ruptured follicle never contains more than a very small amount of blood. A large amount, we believe, should be considered pathological.

We believe that those veterinarians who either have done or intend to do sterility work should study the genitalia by daily observation with a glass speculum and rectal palpation through two consecutive heat periods at least. If you can keep a cow at your hospital this can be done in about 30 minutes daily and by beginning in the middle of a cycle the two heat periods may be studied in approximately 35 days. **We are absolutely sure that you need this information and that you can obtain it in no other way.** One of our marked deductions from this study is that there is no fixed anatomy of the genital organs but during a 21-day period changes are occurring daily that are cyclic in character and certainly all very important in their relation to successful coitus, placentation, nutrition and expulsion of the fetus.

Regarding the second method of study we secured open cows and heifers, kept them under

daily observation and killed them at known times in the cycle following the onset of a heat period. We butchered these animals for meat, removed the genitalia in one piece and, beginning at the upper commissure of the vulva, we opened the vestibule, vagina, cervix, body and horns of the uterus. We examined the character of the secretion, the surface appearance of the mucous membrane and made microscopic sections, one to a dozen, from each of the subdivisions of these tracts and studied them. From some sixty animals used we selected a few typical stages and published the results in the A. V. M. A. Journal of August, 1924. The histological work on the ovary was done by Doctor G. W. McNutt while we published the observations on the tubular part of the genital organs. It is out of the province of our talk here to go into the details of these results except to call your attention to the fact that the paper definitely proves our previous statement that there is no fixed anatomy but a continually changing picture.

The third method of study relates to the cause of heat, the regulation of heat, and the interdependence of the ovary and tubular part of the genital organs. From the follicle we have isolated a substance which produces all, or most, of the vascular and secretory phenomena of heat. With this "estrual hormone" we have been able to bring spayed cows and spayed bitches into heat. We have been unable to inhibit the onset of heat by the use of corpus luteum extract of our own preparation. The first paper regarding these preliminary experiments was given at the A. V. M. A. meeting in Des Moines in 1924 and will be published soon in the A. V. M. A. Journal. In conjunction with the clinical staff we are now reaching out to those cases of sterility which show no pathological conditions when examined by careful use of the vaginal speculum and by rectal palpation, in other words, the cases which we now call "functional." We know that the hormone substance found in the follicle produces heat. The only known hormone action of the corpus luteum is to produce a substance which affects the peristalsis of the tubular part of the genitalia. You can find plenty of statements in the literature about this structure being a gland of internal secretion but there is no proof which will stand experimental investigation. The best proof of its effect is on the peristalsis of the uterus and our other published assumption that it prohibits heat by interfering with the circulation directly or through the opposite ovary, was a thesis well proven by Doctor Clark twenty-five years ago.

What happens when a cow does not come in heat due to a retained or persistent corpus luteum? You squeeze out the corpus luteum, she comes in heat. The mechanical removal of the corpus luteum allows a graafian follicle to develop. The expressed corpus luteum drops into the peritoneal cavity, is broken down by leucocytes and is absorbed. It will then amplify the normal physiological peristaltic waves which represent a part of the cyclic phenomena of the tubular part of the genitalia. The interdependence of the activity of the ovary and the tubular part of the genitalia has now been proven, so far as the action of these two hormone substances from the ovary on the tubular part is concerned. Our assumption that the cycle in the ovary was dependent upon the state of the tubular part of the genitalia, which has previously been contradicted by Marshall, is not so easy to prove.

Many human surgeons who previously removed the entire uterus in disease conditions and left the ovaries in situ learned that by leaving the ovaries they were leaving trouble behind. In cases of tumors, for example, where it is necessary to remove the entire uterus some surgeons now also remove the ovaries and avoid the psychic phenomena which were once thought to be unpreventable sequelae of hysterectomy. So we have been working on the assumption that ovarian function depended either on hormone substances or a nervous stimulation from the uterus during its cycle and have been treating these functionally sterile animals with considerable success.

Eighteen days after a known heat period we give a cow one dose of estrual hormone which increases the subsequent heat phenomena and this, we believe, stimulates the ovary for the following cycle. On the next 18th or 19th day the cow is again treated and when she comes in heat is bred. While we have only a small number, not enough from which to draw conclusions, our success has been better than 50 per cent. We have been able to produce heat in cows on test which showed no corpora lutea or any pathological condition.

Our fourth method has progressed far enough to mention at this time. We have pretty good proof that hormones from some of the other glands of internal secretion affect the heat cycle either directly or through metabolism, and we are attempting to classify these clinically and to study them.

Our fifth method of study is by what we shall

call "anti-serum" for want of a better term, which we are preparing to use in cases marked by a hyper-activity of the ovary. It is possible that this hyper-activity is in part an unregulated activity although we have been unable, in a few cases, to regulate the cycle, so we believe the condition is purely one of hyper-activity.

Sixth method—use of corpus luteum extract alone or as an adjuvant to the estrual hormone.

Doctors Beach and Warwick had five cows ready for examination as follows:

Holstein heifer in heat with marked "attitude."

Holstein cow in post-estrum which was in heat January 27th.

Two cows in pro-estrum, a Swiss and a Jersey, one 22 days since the last heat period and one 20 days.

A Guernsey cow in di-estrum, dry stage.

All of the cows were examined by means of tubular specula by those present.

Second, specimens of the genitalia had been obtained from the abattoir which showed the normal changes in cycle as viewed macroscopically and in contrast to pathological specimens exhibited on the same table. The success of the demonstration was due to the collecting of the excellent material and aid given by Doctors Beach and Warwick.

The following papers* from this laboratory on estrus contain extended bibliographies:

1. Studies of the Estrous Cycle in the Ox, by H. S. Murphey—Amer. Asso. Anat. Abstracts, Dec., 1921. Wistar Institute, Phila.
2. Abstract of Second Paper, Jour. Amer. Vet. Med. Asso., lxii, n. s. 15 (1923), 4, pp. 536-8.
*3. a. McNutt, G. W.—A. V. M. A. Journal, N. S. 18-5.
b. Murphey, H. S.—A. V. M. A. Journal, N. S. 18-5.
*4. Our Present Knowledge of the Phenomena of Estrus in Domestic Animals, the Factors Concerned in their Production, with their Relation to Sterility. (Fourth Paper) by H. S. Murphey, G. W. McNutt, B. A. Zupp, W. A. Aitken, Dept. of Anat., I. S. C. (Read August, 1924, A. V. M. A. and to be published soon in the A. V. M. A. Journal.)
5. a. The Estrous Cycle in the Cow, by H. S. Murphey (Fifth Report). Given at the Wisconsin Short Course for Veterinarians, January 28th, 1925.
b. The Estrous Cycle in Relation to Sterility Practice. Ohio Vet. Quar., Dec., 1924.
*6. Sixth Paper, with Case Reports, will be published soon in this Journal.

Items of Interest to the Practitioner

By A. T. Kinsley

By a study of statistics it can be shown that sun spots has an influence on the number of animals. Thus the Hudson Bay Co. has maintained records since 1845 and according to those records there is an increase in the number of rabbits, foxes and lynx every eleven years, and the years when there was the largest number of those animals the sun spots were least in number.

Intestinal worms are exceedingly prevalent in Wisconsin chickens, so prevalent in fact, that some poultry farms are faced with the necessity of either changing their methods or going out of business. Since most of the diseases of birds between three and ten months of age are either directly or indirectly caused by worm infestation, special effort should be made to prevent them from becoming infested.—Beach, Wis. Cir. No. 177.

There was an increase of over a half million dairy cows in the United States from Jan. 1, 1924, to Jan. 1, 1925. The value of dairy cows decreased nearly 4 per cent and this combined with the fact that there was a marked decrease in the price of butterfat is an indication that there may be an overproduction in dairy products.

A representative of the lactic acid group of bacteria has been incriminated as an important factor in the decay of teeth. It is probable that certain predisposing influences such as deficient diet are also factors in the production of decay of teeth.

"I desire to sound a note of warning against too much specialization. The veterinarian who can treat nothing but horses is in a sad predicament today. Tomorrow the canine specialist may find that his clients are disappearing. Dog owners may grow weary of the enormous losses from distemper. Besides the specialist is quite prone to lose interest in the problems which confront the profession as a whole."—Garnett.

"Hoof balls" is a term used to designate an accumulation of soil entangled with fleece, straw, hay, etc., that adheres to the toes. Such balls are relatively common in goats kept in lots that are not properly drained. "Hoof balls" will vary from three to four inches in diameter

and will weigh from four to six ounces. They naturally interfere with locomotion and predispose to foot rot. They are easily detached and should be removed.

According to Gratia there are two distinct types of B. anthracis, both of which are similar in some respects, but are different culturally and morphologically, and there is a decided difference in pathogenicity. If it is true that there are distinct types or relatively permanent variations in B. anthracis, then the apparent variations in artificial immunity against anthrax can be accounted for.

From preliminary surveys the indications are that Michigan has the highest goitre incidence in the human of any area in the world excepting Switzerland. It would appear that goitre should also be prevalent in young domestic animals in Michigan because the probable cause of goitre is a deficiency of iodin in the soil, food stuff and water supply.

Regardless of the fact that the best flavored meats are obtained from mature animals, there is an increasing demand for baby beef and lambs. The fattening and marketing of young animals permits of a quick turnover and by many feeders is claimed to be more profitable than the feeding and marketing of mature animals. It is probable therefore that it is the producer and not the consumer who is stimulating the demand for meats from young animals

---

Hog cholera virus is not difficult to destroy and proper sanitary control measures are of very great value in diminishing the ravages of this disease. Cholera virus usually becomes avirulent when exposed to light and particularly sunlight for from ten to fourteen days.

It has been fairly well established that osteomalacia in the human is primarily a deficiency disease due to a lack of fat soluble vitamins and probably calcium salts. Osteomalacia and rickets are therefore identical excepting the age of the patient. Rickets and osteomalacia in domestic animals are etiologically identical not only to each other but also to the same diseases in the human.

The loss of livestock due to poisonous plants is an important economic question. It has been estimated that the losses in Colorado from poisonous plants exceeds one million dollars annually. The sheep industry of Wyoming loses approximately 15 per cent of its sheep annually from this cause. From all available information it has been calculated that the average annual loss to the live stock industry in the range states is from three to five per cent.

A new hog film, entitled "Hog Breeds and Hog Management," is now available for circulation from the United States Department of Agriculture. This film, a revision of material used in an older film prepared some years ago for use in South America, shows representative types of hogs of the leading breeds, and touches briefly on the "high spots" in the matter of hog management.

This picture is in one reel, and was produced by the department's office of motion pictures in co-operation with the Bureau of Animal Industry. It will be circulated through the film distribution system of the Department of Agriculture and the co-operating State institutions.

According to reports from some of the horse markets there is a shortage of work horses and practically all markets report a shortage of good draft horses. Riding horses are very scarce and demand a high price. The breeding of good horses will bring good returns and veterinarians should stimulate breeding of proper types.

Neosalvarsan is said to be of very great value as a curative agent in avian spirochetosis. Cernaianu has reported the treatment of thirty-one affected birds that were in various stages of the disease. The neosalvarsan is given intramuscularly using 0.0375 grams per kilogram.

Anovulvitis, an infectious disease caused by the B. necrophorus and characterized by inflammation and necrosis of the ano-vulvar tissues, has been reported in a lot of feeder cattle in central Missouri. This is an interesting affection as it usually has a sudden onset and a large percentage of exposed animals are apparently simultaneously affected. The disease is not readily transmitted experimentally and why the ano-vulvar tissues are invaded has never been determined.

According to some investigators, human and bovine tuberculosis is not transmissible to fowls, at least when the infection is ingested. However, the findings of some sanitarians suggest the possibility of the transmission of hu-

man and bovine tuberculosis to fowls. This is an important question and should be given further consideration.

The number of swine produced in 1924 was about 80 per cent normal. The reduction in sows bred for 1925 spring farrow will be in excess of two million. It appears now that there will be a shortage of swine in 1925 and probably also in 1926.

Polimoes plague designates a disease of cattle occurring in Brazil and characterized by multiple abscess in the skin during one stage. This malady is also called pneumo-enteritis. It has been demonstrated that the filtered emulsion from ticks obtained from affected animals contains the infection. A serum has been prepared which apparently protects animals against the disease.

Touring The Far West

By E. T. Baker, Moscow, Idaho

Are you one of the many thousands who will visit the western part of Uncle Sam's domain this summer?

Have you already begun to anxiously scan western road maps, and to wonder what kind of a country lies beyond the Rockies?

The West is Noted for Wheat Production

Ten years ago, a trip to the Pacific coast was considered the crowning event of a life time. The fortunate person who had been to "Californy" was looked upon as a regular Marco Polo.

Nowadays, the winter capital of Iowa is said to be Los Angeles, and more folks from "back East" have toured the West the past three years than traveled out the whole decade before.

Paved highways, graveled roads, automobiles, tourist parks, and a general trend towards longer vacations, have brought this about.

People are beginning to find out they are only going to live once, and they might as well get as much enjoyment as they can.

Then again, many large conventions have been held in the West, and delegates have gone back spreading the word: "That is sure some country."

Just recently, the last survivor of the original "Covered Wagon" train, immortalized by the late Emerson Hough in the story of that name, passed away in Spokane, Washington. She was a nine-year-old girl, when she climbed on the seat of a covered wagon at Shelbyville, Mo., in 1847. In those days, the oxen traveled as far as ten miles a day, and the trip to the Oregon country took all summer. Today, the passenger on one of our limited trains makes the same distance in three days, and even a flivver, short-breathed and asthmatic, can traverse the "Old Oregon Trail" in a week or ten days.

What preparations should be made for an auto trip out West this summer?

The answer to this question depends on how you expect to travel. If you have an enclosed car, and figure on stopping at hotels over night,

your camping outfit may consist of an extra change of clothing, carried in a suit case, and a few necessary emergency supplies for the car.

Remember, all along the western highways. you will find up-to-date garages every few miles. It is only in our great national parks that you need to be prepared for any kind of trouble.

But keep this in mind about western weather: Our days from June to September are fairly hot, but the nights are chilly. Up in the mountains you may be entertained with a small storm around the Fourth of July, and a sweater and other woolen clothes will come in mighty handy.

In fact, your typical westerner wears clothes that he has found to be the best for his use. High shoes keep the sand and dust out; woolen shirt with long sleeves help ward off mosquitoes; well made, durable trousers and a good hat, or cap, make up a comfortable outfit.

"Cowboy make-ups," with large chaps, flowing bandana, Mexican boots, two-gallon hat,

The only Buffaloes now in the West are safe in City Parks.

and a vicious looking little .22-caliber pearl-handled revolver, are found only in the movies, or at some celebration, such as the Pendleton Roundup or Cheyenne Frontier days.

A woman will find an olive drab hiking suit with good walking shoes suitable for all occasions. Tourist parks offer some comical sights in feminine attire, and only render the wearer conspicuous.

Remember that our western cities of Butte, Spokane, Seattle, Tacoma, Portland, Salt Lake, Frisco and Los Angeles, are just as modern and up-to-date as Pittsburgh or Buffalo.

Assuming that you travel west on a northern highway, returning by a southern route, you will find Montana divided into three parts. The eastern section is a vast area of rolling plains, once covered with bunchgrass, and the home of countless herds of buffalo. The central part is mountainous, and toward the western part, you will encounter great forests of evergreen trees,

The West is dotted with beautiful lakes.

towering mountains and dizzy looking canyons.

Glacier and Yellowstone national parks invite us to stop off, and view their wonderful natural scenery.

Should we travel through Wyoming, we will find this state about as level as Montana, and much like the eastern part of that state.

Passing through northern Idaho, you will traverse its Coeur d'Alene (core-de-lane) mining region, where lead, silver and zinc mines are in operation. The country is mountainous, but dotted with beautiful lakes, of which Pend O'reille (pond-do-ray) and Coeur d'Alene are the largest. It was in this region that the famous Lewis and Clark expedition first crossed the Rockies, aided by the Indian woman, Sacajawea.

Washington is very much like Montana, and when one enters the eastern part, rather level and rolling, he drives into the modern city of Spokane (spo-can). This part of Washington is called the "Inland Empire," and is famous for its wheat ranches, sheep raising, fruit, lumber mills and diversified farming.

Driving on west, the Cascade mountain range is encountered, and, while not as high or rugged as the Rockies, is a great deal more scenic.

Just before reaching the mountains, we come to the valleys of Wenatchee and Yakima, world famous for their apples and other fruit. Further north, will be found Lake Chelan in the heart

A band of 3,000 sheep on their way to an Idaho forest.

of the mountains, known as the Switzerland of America. This is a beautiful body of water, sixty miles long, four or five wide, and over fifteen hundred feet in some places.

Crossing the Cascades, we come to western Washington, and find an entirely different climate. We have dropped from an average altitude of three thousand feet down to sea level. Here we find grass growing the year around; snow is almost unknown, and thousands of contented cows may be seen grazing on the level fields, beyond which may be seen Puget Sound or the Pacific Ocean.

Entering Seattle, we may make side trips to Victoria and Vancouver, British Columbia. Puget Sound, dotted with beautiful little islands, affords a never ending delight, while the jagged Olympics, still further south and west, glisten with their snow caps.

Driving forty miles over a paved highway (the whole Pacific highway is now paved) we pass through the Puyallup valley, which is a wonderful berry center, and come to the city of Tacoma, the gateway to Ranier national park.

Traveling south one hundred and fifty miles on the paved highway, we enter Oregon, and soon come to Portland—the famous rose city.

Here we may spend several weeks, making side trips to Mount Hood, out the Columbia highway, or down to the Pacific coast, one hundred miles west. Astoria, the oldest town in the northwest, but now a strictly modern city, will be found at the mouth of the mighty Columbia.

Let us now go back and take another well known route to the Northwest, the Oregon trail, which leaves the Lincoln highway at Salt Lake City. Much of interest will be found in the Mormon metropolis, such as the tabernacle and wide streets. We may also speed out ten or fifteen miles to that great inland sea—Salt Lake.

Turning north, we pass into south Idaho, noted for its potatoes, sugar beets, alfalfa and large bands of sheep.

We now come to eastern Oregon, much like that part of Washington, except more of a sage brush desert. This is also a great sheep country, and Pendleton, the home of the noted "Round Up," is surrounded by first class wheat ranches.

At the Dalles, eighty miles east of Portland, we come to the scenic part of the Columbia river highway, and view some of the most sublime sights to be found on the continent.

Leaving Portland, we turn south, continuing our tour through the Willamette valley, the oldest settled part of the northwest. Driving three hundred miles, we finally leave Oregon and enter northern California, through the Siskiyou mountains. Passing Mount Shasta, we come to the Sacramento valley and on into the city of San Francisco nestling by the Golden Gate.

We can spend some time here, for "Frisco" is truly a cosmopolitan city, but we must leave, and turning south we pass down the San Joaquin (san wo-keen) valley, where we can view the largest grape and raisin ranches in the world. We may turn off to view the scenery of Yosemite national park, with its mighty El Capitan.

California amazes us, with its redwoods, mountains, wheat and fruit ranches, gold mines, oil wells, winter play grounds, and a multitude of other interesting sights.

Still traveling south, we come to Bakersfield, with its great oil field, thence on to the orange and lemon groves surrounding Los Angeles. This is a thriving little village, whose modest natives very seldom mention the word "climate" to the passing tourist. Only a visit to this rapidly growing city of over a million inhabitants can convince us that such a town really exists.

But we must leave this fairy land, and we suddenly find ourselves in the sandy deserts of Arizona. The Grand Canyon of the Colorado, with its mighty chasm over a mile deep and "straight down" will cause us to forget our hardships.

Nevada is much like Arizona, noted more for mining, sheep raising and deserts (where sheik movies may be filmed) than for scenery.

We may go back direct east, through the South by the Old Spanish Trail, or go up through Colorado, past Pike's Peak, Manitou Park and the Garden of the Gods.

After having crossed three ranges of mountains twice; dozens of swiftly flowing rivers by either boat, ferry or bridge; and having seen snow drifts in July and a few days later, orange groves and bathing beaches, we are ready for home.

In conclusion, you will find prices almost the same as in your eastern city. Gasoline ranges around two-bits a gallon; meals fifty cents a piece, and a good room in a clean hotel may be had for a dollar. Tourist park rates are usually fifty cents a night.

Do not load up with a bunch of junk; remember that you can buy your supplies as you

need them, and thereby keep your car comfortable for traveling.

Do not leave fires in forest preserves; do not hunt or fish without a license; observe the common courtesies of the Golden Rule, and your trip will be a pleasant one.

The Horse Factor In City Trucking*

By Major Elihu Church, Transportation Engineer, Port of New York Authority
New York City

I am going to talk to you about the use of the horse in trucking. I am also going to speak of the horse in the army (I have had a little military experience on the Mexican Border and also in France), and about the part the horse plays in sport. The subject, however, is a great deal broader and bigger than even these subjects. You could motorize every bit of trucking, you could disband the army, you could put tractors on the farm and abolish the horse in sport, yet there still would be a tremendous need for horses.

Horse Pack to Railroad

As a matter of fact, a long time ago it was customary to carry goods on horses' backs. When our ancestors did away with pack trails and widened them into highways and got stage coaches, the horse owners were fearful; they said, "Heaven and earth! The stage coach can carry many times as much freight as a horse can carry on his back. I guess this is the end of the poor horse." But it wasn't. More horses were used with stage coaches than as pack animals.

Then came the railroad, and the horse man said, "The railroads are going to do all the work that the horses have done in the way of teaming. I guess the horse's day is about over." As a matter of fact, there are more horses used now in taking freight to and from railroads than were used in teaming before the railroads came.

Just at present the horse men are tremendously worried about the motor truck. I think I can show you before we have been here much longer that the motor truck is really no menace to the horse at all. I am willing to make a prophecy that we will need more horses and better horses in the next twenty years than we have ever needed before.

Peculiarities of New York

Let us first consider the subject of trucking. The metropolitan district of New York has a good many freight problems. New York City is only one of 105 communities in that district. We import more than half of the goods which come in to the United States, and export more than half of all the goods that go out. It is a bigger manufacturing center than the four others next in line combined, Philadelphia, Chicago, St. Louis and Cleveland. That means raw material in and finished product out.

It is the nation's greatest consuming center. If you go down to the Narrows you can see an ocean steamship bound in or bound out every ten minutes of daylight the year 'round.

The number of freight cars which come in every twenty-four hours if put end to end would reach from New York to Philadelphia—ninety miles. Approximately one-tenth of the population of the United States is concentrated there.

The thing that makes all this of interest to you is the fact that what I say about New York transportation applies to a more or less degree to every other city in the country, and the lessons learned by us can be taken home by you and applied wherever you may happen to live.

Freight Costs in Streets

The first thing that I am going to tell you about transportation is that the railroads and the steamships are the cheapest form of transportation on earth, and that our big transportation costs are in the streets of our cities. The street conditions in New York City alone put a burden on people doing business there of a good deal over $100,000,000 a year.

We had some men down on West Street, Manhattan, for quite a while recently, and told them to report the number of trucks that were drawn by horses and the number of trucks that were motor driven. When the report came back it showed that at the present time 73 out of every 100 trucks are horse-drawn, and the number is growing and the proportion is growing. Gentlemen, the horse is coming back.

I will go a little bit further and say: "He never went."

Traffic conditions in the cities make the horse trucks generally better than motors for handling freight. The horse in a great many cases is actually displacing the motor at the present

*Excerpt from address delivered before Horse Association of America.

time. I will tell you why. The cost of trucking is measured by time, not by distance. If I went to a truck man and said, "I want you to take some goods from my factory down to the Cunard pier, or get some stuff from the Erie station and take it to my warehouse," in quoting a price that man would not say, "How far have I got to haul it," but "How much time is it going to take?"

Horse Costs vs. Motor Costs

It costs six cents a minute just to keep a motor truck on the streets. The chauffeur's wages, the garage charge, and the overhead make up that sum. Every minute the watch ticks and you see a truck standing still, you know it is costing somebody six cents. Go into our city streets and you will see hundreds of motor trucks standing still not for one minute or for one hour but for a great many hours every day. That is why the horse is coming back. It doesn't cost anything like six cents a minute to keep a horse truck on the streets.

Motor Claims vs. Experience

Manufacturers of trucks say, "Don't we make a truck that will carry five tons and go twenty miles an hour and work eight hours a day without getting tired?"

Oh, yes, you do. Advertisements in the Saturday Evening Post tell me that you do. But tell me this, did you ever have a truck in actual service conditions that came anywhere near those figures? No. My studies for New York show that the average load of these big trucks is one to two tons, that their average speed on the streets is five miles an hour, and that they are actually moving only between three and three and a half hours out of an eight-hour shift.

I think many people are oversold on motor trucks.

The Regional Advisory Board has been making a study of terminal conditions because they are beginning to realize that there is where the cost of transportation is. A committee made up of shippers, railroad men, warehouse and truck men, is being formed to study the problem. Some one said, "We will have to get the biggest motor man there is."

I said, "Motor man be hanged! Of course put in a fellow who represents the motor truck business, but the principal man to put in is the man who knows something about horse trucking, because we have got to make terminal conditions better for horses, and it can be done."

Inter-City Traffic

There are highways radiating out of New York carrying over 2,000 trucks an hour. We have got to come to a new type of road—the "motor-truck trunk-line highway" to carry this traffic. There will be "trunk-line" highways just as there are "trunk-line" railroads. Trucks will have to go around cities enroute instead of through them, because a city needs its own streets for its own purposes. Trucks don't belong on ordinary roads; they don't belong on city streets, and you and I are interested in keeping this new type of traffic out of the way of the horses.

Let Dancers Pay Fiddler

At the present time too much tax-payers' money is being paid on roads which are being used for private profit by long distance motor truck men. Those men should pay for the roads which they use. Special roads for heavy trucks ought to be operated as toll roads. We are going to get back to that principle. Toll roads should be built and financed, and will be built and financed in the near future by private capital just as railroads are.

The state of New Jersey spends nearly 20 per cent of its taxes at the present time on highways which are largely used for through traffic across the state. It isn't square.

Horses in Army, War

I am going to speak for a minute or two about the horse in the army. A great many people seem to think there aren't going to be any more wars and that even in the last war the horse wasn't used. As a matter of fact, he was used. The English used him in Palestine and they used him in France. The French used him. Everybody used him. Did any army abandon their horses and their cavalry? They did not.

How about the artillery? Of course some of it was motorized, but they didn't do away with any of the horse artillery.

How about the quartermaster? Motors are all right as long as the roads are good, but what happens when the roads peter out? The horse and the mule then take up the job and "carry on."

The police? Did you ever see a police horse handle a crowd? He does more than the officer on his back.

The horse in sport. Bismarck once said to Disraeli that so long as the English indulged in horse racing they would never have a revolution because on the turf and under it all men are equal.

Horse, Builder of Morale

We now come to another matter, and that is the horse in our daily life. The horse has a power to help the moral and physical life and development of our people as absolutely nothing else has. My grandfather, old Col. Church, had a large stock and wheat farm in the western part of New York state at Churchville. I have often said that I was raised jointly by a doting grandfather and a large St. Bernard dog. In fact, the first words I ever learned were the names of my grandfather's two prize trotters, Danny and Eureka.

Grandfather was a man who had some original ideas, and he gave each of his sons a colt when the boys were a certain age. He said, "This colt is yours. You have got to look out for him. When the time comes to have him broken you will be there. He is to be your horse." The old Colonel often used to remark, "Give a boy a horse or a pony and he will learn more human nature from horse nature than he can learn in any other way." In fact, I will add that no boy can properly grow up unless he has associated with horses and dogs.

Horses vs. Motors for Youngsters

Give a boy a horse and he will develop courage and tact and patience and endurance. Association with animals has a wonderful effect on people. It has an effect on a person's very nature. We often talk of "the cavalry spirit." Pershing rode, Lord French rode, so did Sir Douglas Haig. Allenby originally served in the cavalry, Foch was in the horse artillery.

In the humbler walks of life I used to think the old family coachmen that I knew were among the best men in the world. As I look back I still think they are as good men as I ever knew. When I come to compare them with the modern group of pirates known as chauffeurs, I begin to think a horse has a good deal better effect on a man's nature, than mere machinery has. If you doubt this, contrast the old fashioned blacksmith with the present-day garage mechanic.

I tell you too many young people have motors and too few of them have horses. There is one college where the president recently prohibited the students from having motors. He did well; but no man ever got anything but good out of having a horse and riding. If I were to say what I think are the most pernicious effects on the young people of the present time, I would say jazz music, cabaret dancing, hip flasks and motors. So much for the moral side of it.

Riding Maintains Vigorous Health

Now we come to the physical side. Conditions and fashions change, but men and horses don't change. You can't change a man's environment and have him thrive. The English go to India but they can't bring up their families there. We send troops to the tropics, to the Philippines and Panama, but we can't keep them there over three years. You can't change the habits of 10,000 generations and expect men to live and be happy. Yet that is what we seem to be trying to do in our congested communities. Men's nerves go to pieces under the strain of present-day life in the cities, and the men who go the soonest seem to be the ones we need the most. There is a loss in efficiency and capacity to do work and enjoy life.

We all know the need of exercise for health. They say that the only head of an army during the late war that lasted through from the beginning to the very end was Sir Douglas Haig, who commanded the British troops. I have been told by men who served on his staff that no matter what the stress of action he went out every afternoon at three o'clock and was in the saddle from three to five.

I was with the French at Langres for quite a while, and they made me have my horse brought around every afternoon at three o'clock, good weather or bad, and stay in the saddle for two hours.

When I went back to the Americans I found our people were too busy for that sort of thing. They not only didn't order you to do it but they didn't give you the time to do it. What was the result? I never saw such a nervous bunch of men, kicking the cat, speaking unkindly to the kittens—you know what I mean. They didn't get any exercise.

Roosevelt used to make all of our army officers take a ride every so often. He said no man was fit to lead troops who couldn't ride.

Capacity for Success Greater

I'll go a little further and say that no man is even fit to sit in a swivel chair at a desk and do responsible work who doesn't get out and ride some every day.

Doctors say the trouble with most people is that they don't get enough exercise and don't know how to play.

There is no exercise equal to horseback riding. You find at the present time that people of Anglo-Saxon origin are moving out of the cities, they are going where they can bring up their families in the country and have horses and dogs.

There should be separate roads for horses and automobiles. Shoulders on the sides of these concrete roads are not enough.

We should try to get systems of bridle paths put in wherever possible. Parks and bridle paths are as necessary to a city as paved streets are. A city has to be a good place to live in as well as a good place to do business in.

The horse is a very vital factor in the life of the people of the present day. They must be made to realize it. It is work which the Horse Association is doing. You have a rare combination in this work—a public duty and a private interest.

Diseases of The Reproductive Organs of The Hen

By B. F. Kaupp and R. S. Dearstyne, Poultry Pathological Laboratories, Experiment Station, of the North Carolina State College, Raleigh

The domestic fowl is a short lived individual. During its span of life, which averages five to seven years, its activities are comparable to mammals, the lives of which are many times longer. The function of the hen is entirely economic. When it ceases to be productive, it is eliminated and eaten as food.

It is very probable that in primitive times, the domestic fowl was not a heavy laying bird, possibly being comparable to the partridge, or to other wild birds of today. Increase in population, with the corresponding increase in food consumption has brought a heavy demand to bear upon foods of animal origin, as well as the cereals. This demand has been pronounced as far as eggs are concerned, their well known food properties being instrumental in the heavy per capita egg consumption. The tendency to meet this extra demand has not been through an excessive increase in the number of birds, but in developing birds that were heavy egg producers. This has been accomplished through selection, breeding, and scientific housing, care, and feeding. Science is ever endeavoring to produce a super-strain of heavy laying birds.

The purpose of this paper is the investigation of the relative prevalence of diseases of the reproductive organs of the hen, the classification, and a discussion of the same.

Williams[1] in commenting on the genital diseases of cattle, says: "In recent years, tremendous strides have been made in advancing the efficiency of individuals and faculties in the production of milk, meat, and other desirable elements of value, but in so doing, the reproductive efficiency is frequently lowered, or prematurely destroyed owing to the advent of genital diseases." He further states: "The breeder and the state must accept the alternate view that genital diseases interfering with reproduction are not inevitable accompaniments of advancement in pedigree, but have obtained a strangle hold upon pure bred animals through errors in breeding and handling, which defects can and must be abandoned. It must be maintained, or the high breeding of animals must be abandoned, that a family may be bred and fed to the point of maximum efficiency in the production of meat, milk and other desirable products without adversely affecting the reproductive rate."

[1]Williams, W. L., Report of the New York Veterinarian, 1920-'21.

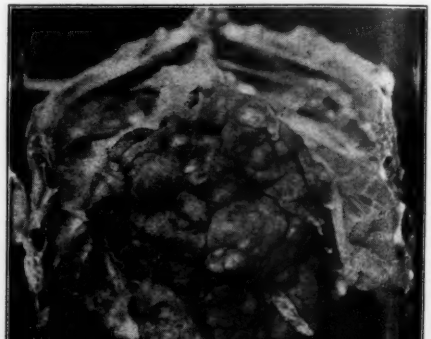


Fig. 1. Ovary of a hen, showing blighted and tumefied ova due to B. pullorum infection.

Whether an increasing tendency for high production is reacting against the vitality of the bird is unknown. Certainly, the hyperfunctioning of the reproductive organs must result in increased food consumption and assimilation. Organically the bird is going at high speed, and the relative percentage of ovarian and oviduct diseases and abnormalities is a matter of scientific interest.

The Reproductive Organs

The reproductive organs of the hen are a highly specialized and efficient body mechanism. Under normal conditions, there is a harmonious and smooth coordination of body activity toward one end—egg production. Egg production is a normal and healthy sign. Continued interruption of production is an indication that an abnormal condition is present in the individual. Briefly the process of egg manufacture and delivery is as follows:

The female organs of reproduction in the fowl[2] are the left ovary and left oviduct. The right ovary and right oviduct are absent due to the fact that they degenerate during embryonic life from the probable fact that there is not room, in the abdominal cavity, for two functioning ovaries and oviducts at the same time.

The ovary is located in the sublumbar region of the abdominal cavity and just to the left of the median line and at the anterior end of the kidney. It touches the left adrenal gland and is located superior to the liver and at the juncture of the thoracic and abdominal cavities. In the pullet the ovary appears as a miniature cluster of grape-like bodies. These grape-like bodies are the single cell ova and number from 900 to 3500, each capable of forming in turn, a yolk. The yolk begins its formation by filtration of yolk material into one of these single cells—the ovum. The nucleus and protoplasm are pushed to one side and later become the blastoderm or germ from which the chick later develops. The yolk consists, when fully formed, of an alternate layer of yellow yolk material and of albumen with a flask-shaped mass of white yolk extending inward from the germinal spot which so gauges the gravity of the yolk that no matter how the egg is turned, the yolk assumes a position with the germ cell on top. As soon as the yolk is fully formed, the capsule in which it is developed forms a stigmal line; finally the capsule ruptures and allows the yolk surrounded with its vitalline membrane to fall into the ovarian pocket where it may be met by the spermatozoon of the male and fertilization take place. The balance of the egg, consisting of the albumen, shell membranes, and the shell are formed in different parts of the oviduct. The first portion of the oviduct is the funnel with expanded portion toward the ovary to receive the yolk. The function of this part is to guide the yolk into the second portion. The albumen secreting portion consists of the larger part of the oviduct, and it is here that the columnar cells lining the folds of the mucous membrane form the albumen. The formative egg then passes into the third portion or isthmus, which

Fig 2. Cystoma of the ovary of a hen. Each cyst is a blighted ovum filled with a clear liquid.

is short and the folds of mucous membrane are lower. Here the two shell membranes are formed, after which the egg passes into another short portion, the shell gland portion or uterus. Here the mucous membrane is thrown into long, leaf-like structures, and in this part, the shell is placed on the egg, after which it passes into the fifth part, the vagina, where the tint, if there be any, is placed on the egg, and also a varnish coat which gives it the so-called bloom. It requires 18 to 22 hours for the egg to pass through the entire length of the oviduct, and about 7 to 10 days for the yolk to form.

Diseases

In grouping the diseases of the ovaries and the oviduct, there is no hard and fast classification. At this station, a detailed postmortem ex-

Fig. 3. Hematoma of the ovary of a hen. This hematoma is 100x100x60 mm. The content was a thin bloody material.

[2]Kaupp, B. F. Poultry Diseases, Alex Eger, Chicago, Ill. Kaupp, B. F. Anatomy of the Domestic Fowl, W. B. Saunders Co., Phila.

amination is made, and record kept of all birds dying at the central plant, and those sent to the laboratory for postmortem examination. Of 1,024 hens and pullets autopsied in the past two years, ovarian and oviduct diseases were found in 92 or 8.98 per cent. These are listed below under the following groupings:

goes into the following differentiation:

Female tumors:

¼ to 2¼ years of age—53 out of 723 or 7.33%.

2¼ to 6¼ years of age—11 out of 55 or 20.0%.

Unknown age—12 out of 58 or 19.3%.

Total of 76 out of 836 birds autopsied or 9.09%.

TABLE I

Table giving number adult hens of 1,024 autopsied that had disease of the ovaries or oviduct. Also giving the per cent these are of total birds autopsied and of those suffering from ovary or oviduct troubles.

Disease	Total	Percent Total Birds Posted	Percent Total Birds Showing Ovary or Oviduct Diseases
Tumors:			
Hematomas attached to ovaries	7	0.68	7.6
Other tumors attached to ovaries	6	0.58	6.5
Cystic ovaries	29	2.83	31.5
Tumors of the oviduct	1	0.10	1.1
Eggs broken in the oviduct	8	0.78	8.7
Rupture of the oviduct: eggs in abdominal cavity	8	0.78	8.7
Tuberculosis involving oviduct and ovaries	5	0.49	5.4
Inflammation or congestion of the oviduct	13	1.27	14.1
Obstruction of the oviduct	15	1.46	16.3
Total	92	8.98	

Fig. 4. Carcinoma of the oviduct, showing at 1, a section of the oviduct wall; 2, the carcinoma; 3, the pedicle which attaches it to the wall of the oviduct.

Tumors

Tumors in the domestic fowl are not infrequently found. Fuller[3] reports 7 cases of malignant tumors out of 308 autopsied or 2.3 per cent. Lentz[4] of the Massachusetts station reports 4 ovarian tumors or 2.2 per cent of 186 birds autopsied, but does not report on the sex of the birds autopsied. Curtis[5] of the Maine station, in a very comprehensive work on tumors of the domestic fowl reports 79 autopsied birds showing tumors of 880, or 8.98%, and

Location of Tumors:

37 of ovaries out of 73 females of all ages.

10 of oviduct wall out of 73 of all ages.

8 of oviduct ligament out of 73 of all ages.

In commenting on these data, Curtis says: "Attention has already been called to the fact that tumors occurred as frequently in apparently normal birds which were killed as those which died from natural causes. From the data given, it may be seen that many of the birds with tumors died from diseased conditions apparently not related to the presence of tumors. There were, however, a number of cases where the size and distribution of the tumors, and the condition of the organs to which they were attached indicated that the tumors were the probable cause of death. Associated with many cases of tumors was a hypertrophied condition of the liver, spleen or kidneys. The liver was most affected. In fact, 19 or 24.05 per cent of the individuals having tumors had enlarged and soft friable livers. In the absence of microscopic examination of these organs, it cannot be definitely stated that this hypertrophy was due to infiltration with tumor cells."

"Our microscopic examinations of the tumors limited their classification to the two groups of tissue tumors, formed or solid masses of tissue, or sometimes of large tissue masses enclosing masses of pus, mucus, or clotted blood and cystic tumors which were sacs filled with liquid."

"The organ most frequently affected is the ovary, 37.76 per cent of all tumors occurred in

[3]Fuller, J. W. New York State Veterinarian's Report, 1920-'21.

[4]Lentz, J. W. A Study in the Control of Poultry Diseases. Poul. Sci., Vol. 2, Dec.-Jan., 1922-'23.

[5]Curtis, M. R. Frequency of Occurrence of Tumors in the Domestic Fowl. Jour. Agr. Res., Nov. 20, 1915.

that organ. The oviduct wall and ligament harbored 18.36 per cent, that is, in the female the genital organs are most frequently affected."

Under the classification adopted in this article are included the tumors as listed in Table I involving the ovaries and oviduct. This class of tumors represents 46.7 per cent of all birds showing diseases of the reproductive organs. Of these, 29 or 31.5 per cent showed cystic ovaries. This type of tumor consists of yolks or ova in the process of formation, blighted and degenerating, and later become hard, irregular masses, yellow in color, consisting of more or less dried and inspissated yolks, much of the liquid being absorbed. Ovarian infection with Salmonella pullora, the organism of bacillary white diarrhea, is a common cause of this condition (see Fig. 1). Cysts sometimes occur in the ovaries containing a colorless or a straw colored fluid. This condition is shown in Fig. 2, where there are dozens of these cysts the size of a boy's marble.

There is considerable variance in the time from the onset of such disease of the ovary and oviduct until it manifests itself sufficiently to entirely stop egg production. Trap nest records of birds dying showing tumorous conditions of the ovaries are listed as follows:

Case No. 1, P. M. No. 1316, leg band C9; A S. C. Rhode Island Red pullet. Laid her first egg December 8, 1923, with the following monthly record: December, 6; January, 21; February, 20; March, 13; April, 16; May, 9. During June, the bird laid on the 7th, 20th, and 27th. In July, on the 6th, 14th, and 19th, and one egg on August 2nd. The bird died August 25th, and on postmortem examination showed blighted ovaries with no other apparent trouble. In this case, the disease probably started to exercise a detrimental effect early in June, the laying being irregular from that time on. The interval from the last egg to death was 20 days.

Case No. 2, P. M. 895, leg band 488: A S. C. White Leghorn hen. Hatched April 28th, 1916. Her yearly egg production was as follows: First year, 185 eggs; second, 208; third, 194; fourth, 153; fifth, 115; sixth, 67—the year in which she died. She laid on the 8th and 13th of July; laying irregularly during the sixth year, and the bird passed shells lacking in calcium. Died November 31, 1923. The postmortem examination showed blighted ovaries and congestion of the liver. The interval from the last egg laid till death was 141 days.

Case No. 3, P. M. 1084, leg band 896: A S. C. White Leghorn hen. Placed in the laying pen, November 1st, laid 13 eggs in November; 2 in December, which were her last, and three years later she was killed for autopsy purposes. Postmortem examination showed that the entire ovary had disappeared, and in its place there had developed a small round sarcoma measuring 8x9x10 mm.

Fig. 5. Polypus attached to the inner wall of the albumen secreting portion of the oviduct. 1, the pedicle; 2, the tumor mass forming a central core, around which there was a cyst. The cyst wall can be seen pendant.

Case No. 4, P. M. 1085, leg band 223: A S. C. White Leghorn hen, 3½ years old. Laid 16 eggs in November of her pullet year; 3 in December and none after that time. She died March 6, 1924. The time elapsing from the last egg to date of death was nearly three years. The postmortem examination showed 5 small sarcomas, 2 to 1.5 mm. in diameter.

Hematomas

Of 92 birds showing diseases of the generative system, 7 or 7.6 per cent showed hematomas, or 0.68 of the 1024 hens and pullets autopsied.

Hematomas are blood tumors caused by a hemorrhage. In the domestic fowl, they are

Fig. 6. A mass of eggs retained in the oviduct. 1, a shell wall; 2, yolks, 3, masses of albuminous material in a semi-solid state.

relatively frequent as indicated by the above data. These tumors usually occur in the ovaries; in the ova in the process of formation, or in those nearing degenerative changes, congestion and hemorrhage may take place. These hematomas vary in size, some developing quite large, depending on the lateral pressure to control the hemorrhage. The larger hematomas may exert considerable pressure on the vital organs. So far as interference with egg formation, or production is concerned, at first it is quite probable that it retards and later as the tumor becomes larger completely arrests egg formation. In other cases ovulation probably continues uninterrupted. Two interesting cases have come under our observation and are here reported:

Case No. 5, P. M. 1223, leg band 21. A White Wyandotte hen. Laid her first egg on the 7th of December, 1923, and 10 during that month.

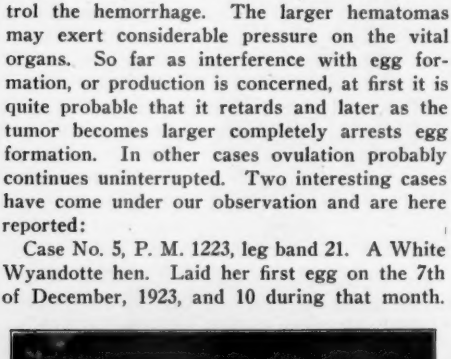


Fig. 7. Edema of the visceral peritoneum of the intestine of a hen.

Laid on the 7th and 9th of January, on the 21st, 26th, and 27th of February, and on the 19th of March. Died on the 9th of June, 1924. The interval from the laying of her last egg to the date of her death was 82 days. The postmortem examination revealed a hematoma of the ovary and active congestion of the liver and kidneys.

Case No. 6, P. M. 1240, sent to laboratory by H. F. B. of Dover, Mass. A White Plymouth Rock hen. Between the first egg on November 29, 1923, and October 30th of the following year, she laid 252 eggs in the Storrs egg laying contest. Shipping her home interfered in no way with her laying, and she continued at a reduced rate, laying steadily but not so intensely. On November 1, 1923, after about two years of laying, her record in full consisted of 252 eggs for the first year, and 166 for the second. She had not gone longer than six days without laying, and in all that period, there were only three occasions on which she went as long as six days without laying. Continued laying third winter of 1923-'24, and laid steadily until May 16th, at which time she stopped, continuing, however, to enter the nest at frequent intervals without laying an egg. Since that time, she nested steadily and regularly approximately two or three times a week, but since that date laid but one egg—on June 20th, the first misshapen egg in her career, it being flattened on one side, evidently due to unnatural lateral pressure. The hen was sent to the poultry disease research laboratories of the North Carolina State College and killed for autopsy purposes, October 4, 1924. The interval from the time of laying the last egg to the day she was destroyed was 106 days. On postmortem examination there was noted a slight enlargement of the liver and a large ovarian hematoma measuring 100x100x60 mm. and containing a thin red liquid. This is shown in Fig. 3.

While epitheliomas have been observed affecting the skin structures of fowls, yet the first true carcinoma was observed recently as affecting the oviduct ligament and attached to the wall of the oviduct by means of a pedicle as shown in Fig. 4. This was in a S. C. White Leghorn hen. The ovary was in a quiescent state.

Broken Eggs in the Oviduct

This condition is usually the result of an accident. Death shortly follows as a result of the complicated obstruction resulting from the fibrous exudate thrown out about the broken egg. Such a case usually shows the bird in full lay at the time of death, as the following case will show:

Case No. 6, P. M. 479, leg band 472. A S. C. Rhode Island Red. She laid her first egg in her pullet year, Dec. 1, 1923; 9 eggs were laid in December; 4 in January, the last being on the 8th. The bird died on the 10th. The postmortem findings showed an egg broken in the oviduct.

Inflammation of the Oviduct

This condition was observed in 13 or 1.27 per cent of all female birds autopsied; of 14.1 per cent of 92 hens and pullets showing diseases of the reproductive organs. This trouble may be the result of infection from the digestive tract by way of the cloaca, which interferes with or arrests the functions of the various glands of the oviduct. The condition usually results in the stoppage of the egg delivery.

Obstruction of the Oviduct

This disease was observed in 15 out of 1024 female birds showing diseases of the reproductive organs. Obstruction, in this sense of the word, is something the bird cannot force out or expel from the oviduct. It results from failure of the secretory glands of the oviduct to func-

tion, eggs too large in size, or polypi of the oviduct as shown in Fig. 5, where a long pedicle held a tumorous mass suspended from the oviduct wall. Also weakened muscles from various causes, and other disease processes may cause this condition.

Rupture of the Oviduct

This is usually caused by the vigorous contraction of the muscular walls of the egg canal in the efforts toward expulsion. The eggs slip from the torn oviduct wall into the abdominal cavity or the ovarian pocket may be ruptured and the eggs pass back into the abdominal cavity through this channel, in which location they may become encapsulated. In the 92 cases listed, 8 or 8.7 per cent showed such pathological condition. This is 0.78 per cent of the 1024 autopsies. Such cases remain sterile as far as egg delivery goes, probably from the initial rupture. Much of the egg material may be absorbed and the balance becomes organized. The body vitality is rapidly weakened. Sometimes there may pile up two or more eggs in the oviduct as shown in Fig. 6. This is a cross section through the oviduct showing yolks as well as albumen and around one of the eggs a shell showing that the oviduct in that case functioned as far as and including the shell gland or uterus. At times one or more yolks may become lodged at some point of the albumen secreting portion of the oviduct and a large mass of albumen formed around the mass before the cells become diseased and secretion ceases. Secretion of albumen is a contact stimulus and such a sequence is readily understood.

Other conditions causing a stoppage of egg production are common and among the rare conditions may be mentioned one shown in Fig. 7, donated to the poultry pathological laboratory of this department by Dr. Spoon of Burlington. It is an edema of the visceral peritoneum of the intestines, the first case of its kind we have had the good fortune to observe. This condition is brought out clearly in the cut.

Tuberculosis

This disease is more or less prevalent according to the location. Fuller[6] reports one case of tuberculosis in 308 chickens autopsied or less than one per cent. The North Carolina State College Station laboratories observed 13 out of 1485 birds autopsied or 0.89 per cent. Of these 5 were in females involving the ovaries or oviduct. Localization of tuberculous infection in the ovaries undoubtedly permanently blights these organs, thereby rendering the formation and delivery of eggs impossible. Fig. 8 shows a case of tuberculosis of the ovary of a hen.

[6]Fuller, J. W. New York State Veterinarian's Report, 1920-'21.

Ulceration of the Posterior Bowel

Ulceration of the posterior bowel and anus is by no means rare in the fowl. It is commonly, among poultrymen, called vent gleet and quite often involves the posterior portion of the oviduct, and results in scar tissue, and obstructs the oviduct, which occludes the part and prevents the passage of the egg. Such a condition is shown in the third edition of Poultry Diseases[7] where 9 eggs were arrested in their development and passage before the ovary became quiescent.

Fig. 8. Tuberculosis of the intestine and ovary of the hen. The tubercles are clearly shown.

Summary

There are here classified 92 cases of diseases of the reproductive organs of the hen. This represents a total of 8.97 per cent of the 1024 hens and pullets autopsied. Of these 92 cases,

[7]Kaupp, B. F. Poultry Diseases, third edition, Alex Eger, Chicago.

43 or 46.7 per cent showed tumorous conditions. Inflammation, obstruction, and rupture of the oviduct accounted for 36 or 39.1 per cent of the total; 8 or 8.7 per cent showed broken eggs in the oviduct, and 5 or 5.4 per cent were affected with tuberculosis of the ovary or oviduct.

Helpful Hints in Equine Practice*

By L. A. Merillat

DIAGNOSIS OF DENTAL DISORDERS

The truth about dental disorders that actually produce clinical symptoms is that we do not diagnose them at a very early stage. The development of the disease must be advanced before it can be disclosed by our conventional system of examinations. The incipient, hidden, obscure disease goes on undiscovered unless a more searching examination is made than that usually made in the average veterinary practice.

A proper examination includes first the determination of the age. Knowing the age is always important in diagnosis; in dentistry it is indispensable, for here are organs that undergo remarkable changes, both normal and abnormal, from youth to old age, which must be taken into account in every deliberation over a suspected disorder.

With the matter of age out of the way and every anatomical, physical and pathological condition common to that age in mind, a systematic examination of the mouth may then be undertaken.

A good way to make a fairly good examination of the mouth by inspection is to back a horse into a short stall, loop a rope around the maxillary incisors, pass it through a pulley over a beam at the ceiling and then draw the nose upward so that the mouth will come in range of the line of vision. A horse will not object much to this, and it will keep its mouth open better than in any other position in which it can be placed. By drawing the tongue first to one side and then to the other, with the aid of an electric flashlight, a very good view of all the teeth may be had. To detect black spots that might prove to be of consequence, the arcades may be washed with pledgets of cotton soaked in water.

By this system, without even placing the hand into the mouth a very good idea of the condition of the molars may be gained. Lost teeth, short and elongated teeth, growths of the palate, swelling of the tongue, ranulae, abrasions of the cheek and tongue, will be brought into view in a manner never thought of by one who has not tried this simple system of inspecting the mouths of horses. When a molar is found to exhibit a rather conspicuous infundibulum, this can even be searched with a steel pick (tooth searcher) to determine its depths. The essential here is to have good light and a stall of the proper length to prevent the horse from backing into an uncomfortable position.

This plan offers the best opportunity to make fruitful examinations in the standing position, and when no decision can be made, the only alternative is to secure the patient in the recumbent position, open the mouth with the speculum and then begin a patient search, tooth after tooth. The horse placed recumbent for such an examination should have the head held upward at an angle of thirty degrees. On the operating table should be a padded beveled box that can be fixed to the surface of the table with projecting bolts which pass into holes provided to receive them. With a head fixed firmly upon such a contrivance and the mouth opened with the speculum, the patient is in a good position for an examination of every part of the oral cavity.

The first requisite is to clean the teeth of all feed particles which are always found lodged about, by sponging. They may first be wiped with the dry sponge to bring out the large particles and accumulated masses of food and then polished clean by a wet sponge. Liberal ablutions will not do because the waste might be aspirated into the trachea with the organs of deglutition handicapped by the stretched position of the jaws. The saliva that accumulates must be baled out with the sponge to avert the same accident with this fluid.

Examination of the gums is now made on both the buccal and lingual surfaces of the arcades. By passing a pointed but not sharp pick between the gingival margin and the lingual surface of the crown, it will be easy to find

* In response to requests from readers, we are reproducing this series of practical articles by Dr. L. A. Merillat, written in 1916-17, and considered by many as representing this author at his best. These discussions are quite as applicable to conditions today as they were when first published in Veterinary Medicine, eight years ago. Moreover, they serve to focus attention on a phase of practice which there appears to be a tendency to neglect in some quarters.

where the gums are detached. In this examination note is made of receding gums which like loose gums indicate disease.

The buccal gums are more difficult to examine as the cheek is stretched tight against them with the speculum. To overcome this, when we desire to make a careful examination of this face of the molars and their gums, we remove the blade from a common float and pass it back between the molar arcade and the cheek and thus pry the cheek outward enough to give the rays of the flashlight a chance to penetrate to the very depth of the arcade. After a little practice, it will be found possible to examine both by inspection and palpation with the pick, even the buccal face of the last molar. The posterior part of the molar alone is hidden because it curves inward and out of sight in the upper jaw. The inferior third (sixth) molar can be easily examined everywhere.

This examination of the external face of the molars often discloses depressions from broken plates that are not found in any other examination. It may even disclose loose plates that were not discovered by digital palpation. Such a case was found at the surgical clinic of the Missouri Valley Association at Omaha, July, 1916. In spite of an ordinary inspection and digital palpation, nothing abnormal was found, but when the examination was made, as described in the foregoing, of the buccal face of the molars, a loose plate was found.

The attention may next be directed to the table surface. Beginning with the first (fourth) molar, which is more often decayed than the others, a careful search is made for uncemented infundibula. These appear in the form of conspicuous dots larger and more open than the dots of normal infundibula. There are two on each molar. All of them must be examined, and while too much dependence must not be placed on open infundibula as evidence of decay, they may be regarded as especially incriminating when one stands alone wide open admitting the steel pick with great facility and the adjacent ones are ceiled shut. Such evidence coupled with the other symptoms which lead to the examination, possibly a fetid emanation from one nostril, has always been regarded by us as conclusive evidence of decay, and it is indeed very rare that the dissection of the tooth after extraction did not prove the wisdom of the diagnosis.

When on examinations of the table surface, it is found that all or many of the infundibula are wide open, it would not be safe to base a diagnosis entirely upon this symptom. Unceiled teeth are not always decayed.

The following are the more common disorders one seeks in dental examinations:

1. Sharpness that wounds the mucous membrane.
2. Elongations of the molars from decayed or absent opponents.
3. Depressions on the molars that indicate decay cavities.
4. Broken plates or the fissuring that precedes the fracture.
5. Loosened or receded gums.
6. Wide interdentia that admit food particles.
7. Open infundibula on the molars.
8. New growths on the palate which are usually cancers.
9. Swelling of the tongue indicating foreign bodies.
10. Ranula.
11. Shedding caps.
12. Loosened molars of old age.

CASE REPORTS

THE VULVA TEST IN TUBERCULOSIS OF CATTLE

Last August a client of mine called and stated he had an eighty-pound shoat down in its hind parts. I gave treatment and apparently the animal recovered. In November when the shoat was weighing about 160 pounds, it became affected in the same way. At this time a litter mate developed pneumonia, for which it was treated without beneficial results.

As the first hog was fat, I suggested that it be slaughtered as its appetite was good, and I thought the condition was only a case of paralysis. When the hog was slaughtered, I found to my surprise a generalized case of tuberculosis.

Immediately I began to look for the source of infection, and found that the owner had purchased a cow in February of the same year. This cow had been tuberculin tested about sixteen months before the time the hog was killed. The cow had an enlargement on the facial tuberosity. My attention had been called to this before, but as it was away from the glands, I thought it was an old injury. I applied the intradermal test using the caudal fold and also used a check test on the vulva.

The cow proved to be a typical reactor. The strange part, however, was that she reacted entirely from the vulva test. I have never been able to learn whether or not the vulva test was used when the cow was tested before, but am of the opinion that it was not.

I saw this cow slaughtered at Indianapolis under government inspection, and she showed generalized lesions of tuberculosis and was "tanked."

The hog that had pneumonia died in a few days and showed generalized lesions of tuberculosis. This hog and the one that was paralyzed were out of a bunch of fourteen. I cannot say what happened to the other twelve as they were shipped before the lame one was slaughtered. It is needless to say that these two hogs were fed milk from the tuberculous cow.

Since this case, I always use the vulva test in connection with the caudal fold. I do not believe a veterinarian is doing justice to himself and client if he omits the vulva test in connection with the tuberculin testing of cattle. I believe that this cow had enough tuberculosis sixteen months previous to have reacted had the vulva test been used. Why she did not react to the caudal fold test, I am unable to say.

This case has been a very valuable one for me. It shows without the question of a doubt what one cow can do for an owner from the standpoint of dollars and cents, to say nothing about the family hazard from the use of milk. I might add that this case alone has doubled my tuberculin testing of cattle in my territory.

Paul F. Scott

New Market, Ind.

TRIPLE TORSION OF THE UTERUS

Some time ago I was called out of my own territory to see a cow that was unable to freshen. On arrival the owner met me with the encouraging news that he had tried to help the cow but had been unable to find any opening whatever. Before making examination, I was of the opinion that the cervix had not dilated, but on examining the animal, I found severe torsion. It was absolutely impossible to insert even a well lubricated finger. Strange to say, there was no one at the farm but the owner—there are usually far too many would-be advisers—but by hard work, the cow was cast and turned over on her back several times. Because of the fact that there was no way to hold the fetus, this did no good whatever. I was still unable to insert a finger.

Next the site of operation was prepared and an incision large enough to admit the hand made down to the uterine wall. The uterus was found enormously distended with fluid, and on palpation of the neck of the uterus, I found three distinct torsions. Because of the great amount of fluid, it was impossible to get hold of the fetus sufficiently to correct the torsion, and after trying for some time, I opened the uterine wall, allowed the fluid to escape on the outside and removed the calf, which was perfectly normal. The uterine wall was closed with interrupted sutures and the abdominal muscles and skin with heavy, closely set, interrupted su-

tures. The animal stood the operation very well and looked as promising as any cesarean subject. As already mentioned, this farm is out of my territory, and I have not kept track of the case.

Simple torsion is, of course, not unusual and is generally fairly easy to reduce, but why the triple torsion? Was the fluid responsible? And yet some people say that a veterinarian's job is all cut and dried and requires no initiative. Oh, well!

Charles B. Skinner, D. V. M.

New Berlin, N. Y.

TREATMENT OF STERILITY

A high grade Holstein-Friesian cow with a retained placenta. The membranes were removed and the animal given a douche of B. S. P. (a solution of mineral oil, one pint, bismuth subnitrate, one dram, salol, one ounce), also a dose of metritis bacterin. The same treatment was administered five days later. At this time a corpus luteum of pregnancy was dislodged. After an interval of three regular heat periods, the animal was bred and conceived, giving birth to a fine heifer calf in due time.

Then a period of forty days elapsed without a heat period, and I was called once more. This time I found the uterus in fine condition, with an embedded corpus luteum in the left ovary. After several trips trying to dislodge the body by digital pressure per rectum, I decided to try to stab it through the vagina.

By grasping the ovary through the rectum with my left hand and drawing it back over the vagina so that I could insert my right hand into the vagina, I operated by holding the scalpel in the palm of my hand with three fingers and used my index finger to locate the ovary until the end of the blade was against the vaginal wall over the center of the yellow body. When sure that the end of the scalpel was properly placed and directed toward the center of the corpus luteum, with the aid of the thumb and index finger, I gave a quick thrust forward through the vaginal wall and into the yellow body, nicking the luteum tissue. The scalpel was then withdrawn and the pressure on the ovary continued until the body was dislodged and for a brief period afterwards to be sure that a hemorrhage was not established.

In a short period the pyometra and cervicitis were controlled and the animal conceived after the first service and carried a calf for five months, when she aborted.

Again in the same ovary a corpus luteum developed which I dislodged. This recurred on three following occasions until a cystic degeneration of the corpus luteum and quite a severe pyometra developed.

Finally I gave up the rupturing of the cysts, because I felt that in this case a new wound offered an excellent avenue for invasion from the oviduct, and I resorted to ovarian and pituitary extracts, with the assistance of B. S. P. and Mercurochrome—220, 2%. The ovarian extract used was Synergin No. 6. The animal was also given Murphy's minerals.

With the complications present, the estrual cycle became very irregular and the prognosis looked bad. But within six weeks there was a remarkable improvement, the pyometra soon subsided, and the animal was bred and conceived after some difficulty, giving birth to a normal calf, and is now supposedly with calf, having shown no further trouble.

C. Roy Strange, D. V. M.

Johnstown, Colo.

ADRENALIN IN MILK FEVER

(Report awarded 1st prize)

Noticing an article in the May issue regarding the use of adrenalin as a treatment of milk fever, induces me to send the following case report:

I was called to a farm early one morning to see a cow which the owner stated could not get up. On arriving at the place, I was taken to a lot where I found a fine six-year-old Holstein lying in a state of coma. I questioned the owner and learned that the cow had a calf two days before but seemed to be all right until that morning. I made an examination and diagnosed the case as milk fever. I gave the old reliable treatment of inflating the udder and a hypodermic injection of one-half grain strychnin and ten c.c. of camphor in oil. The owner was assured that I believed the cow would be up in a few hours and no further treatment would be necessary.

To my great surprise, the owner called me that afternoon and said the cow was no better. I called to see the case again and gave the same treatment as before, but was not quite so sure of the prognosis.

The following day I called and found the cow in the same condition and gave the same treatment as before. I called again at noon and repeated the treatment.

That evening I decided the treatment must be changed or the cow would die. Knowing the action of adrenalin locally, I thought I would try it for its systemic effect. I admin-

istered two drams (1-1000 solution) subcutaneously and used cold packs on the animal's head and udder. The next morning I repeated this same treatment. The cow now would drink a little water and showed signs of improving.

At noon the owner reported that the cow had gotten up and gone to the barn for something to eat and drink. She seemed to be normal. In about an hour the owner milked her and received three gallons of milk. The cow has shown no further symptoms of the trouble and has been doing nicely ever since.

I am not submitting this as a new treatment for milk fever but simply to record one case in which I used adrenalin and think I found beneficial results.

N. E. Peigh, D. V. M.

Hamlet, Ind.

PARTURIENT PARESIS OR WHAT?

On April 17th, at 4 p. m., I saw a case in a Jersey cow, within one day of the estimated average time of gestation, viz., 279 days. There was difficulty in rising, staggering gait, indifference to surroundings, pulse 70, temperature 100°.5 F., respiration faster than normal, udder flabby. The genital organs were tense, no relaxation, and the os uteri firm and closed. My treatment consisted of udder inflation, one-half grain strychnin hypodermically, covered the body, also gave fluid extract nux vomica, one dram, fluid extract digitalis, one dram, aromatic spirits of ammonia, two ounces, every four hours. Prognosis unfavorable. The following morning the cow was down and unable to rise. The udder inflation was repeated, atropin, one-half grain, given, and continued the stimulants as before. At noon the treatment was repeated, but the cow died that evening. There was no response from the treatment. The symptoms were similar to and typical of parturient paresis. If not that, what did the cow have?

Having read with interest case reports in Veterinary Medicine of parturient paresis in its various presentations and having had some cases noticeable as to their occurrence at stages quite apart from the orthodox teachings of its periods of affection, I will relate a few.

No. 1. Ayrshire cow, with well marked case of parturient paresis, delirious form. The animal had not freshened. The genital organs were relaxed and os uteri dilated. The calf was delivered without difficulty. I gave the usual treatment—udder inflation, atropin, one-half grain, and covered the body. Recovery followed in three and one-half hours. No further treatment.

No. 2. Heifer, very ordinary grade, poor milker, freshened in the forenoon. I saw the case at 3 p. m., showing typical symptoms of parturient paresis and treated accordingly. At 7 p. m., the cow was reported to be up in her stall and feeding. No further treatment.

No. 3. Grade Holstein cow found lying in pasture field unable to rise, manifesting usual symptoms of parturient paresis. The usual treatment was given, and in five hours the cow walked to the stable and made a good recovery. This case occurred two months after parturition.

No. 4. Jersey cow. April weather and cows were stabled, the owner letting them into the barnyard for water. This cow collapsed in the yard and was unable to rise, showing typical symptoms of parturient paresis. I gave the usual treatment. Recovery followed in three hours with no other treatment. This case occurred within four days of five months following parturition. The features of this case in particular are the period at which it occurred and the suddenness of the attack.

In relating such cases to some practitioners, there is a well marked difference of opinion as to the possibility of parturient paresis occurring at such periods. Be that as it may, it is results that count, and with the exception of the first case described, they responded to treatment. As this is the only case I ever had to treat with the calf in utero, I should be pleased to hear from some who have had similar experiences.

A. S. H., Ontario

PYOMETRA IN COWS

I should like to know if there is any new treatment for pyometra in cows. I have two cows under treatment that calved about fourteen months ago and have not come in heat since that time. They are about seven years old and have calved normally each time. These cows are purebreds, and the owners do not like to give them up. The symptoms are—there is about a quart of thick pus in the uterus at each treatment; the uterus is enlarged and the walls thickened; the tubes feel normal, and the ovaries are atrophied. I have given the following treatment: irrigating the uterus every ten days with a two per cent solution of Lugol, then massaging the uterus and ovaries per rectum. Do you think bacterins would be of any value in these cases?—K. K. S.

Reply by J. F. DeVine: I tried to explain this rather fully in an article I wrote for VETERINARY MEDICINE which was published in the November 1920 issue, page 530. I have also since written an article on metritis with par-

ticular reference to bacterin treatment. Cases of pyometra, if the tubes and ovaries are not involved, have been very satisfactory to treat in my experience. Simply drain them a few times—never think of using a Lugol solution—and after draining and irrigating very carefully with a good saline solution, I rely on massaging and bacterins, all of which is explained in the articles referred to.

TUBERCULOSIS OF THE UDDER OF A MILK COW

Among the many interesting clinical cases observed in systematic tuberculosis eradication, one of the most striking occurred recently in a Utah herd tested by Dr. C. L. Jones, Federal veterinarian stationed at Provo, Utah. He applied the intradermic test to the ten cattle in the herd, obtaining one reactor. This was a 5-year-old grade Guernsey cow showing no physical symptoms, but the test revealed a positive characteristic swelling at the point of injection.

On postmortem examination under Federal inspection at North Salt Lake (suburb of Salt Lake City), the cow showed well-marked lesions of tuberculosis in one quarter of the udder. Lesions were found nowhere else in the body. As seen in the pictures, the infected quarter and teat appeared normal externally, but when cut into, as shown in the second view, four tuberculous nodules adjacent to the milk duct are plainly visible. The pointer shows one of the largest. The dark spots on the cut surface of the teat are small clots of blood.

Teat and portion of udder apparently healthy from external observation, yet proved to be tuberculous.

View of same teat (shown in companion picture) when cut obliquely, disclosing tuberculous lesions. The arrow points to one of the largest close to the milk duct and into which discharges naturally drained. The owner had noticed that the teat was sore, but it remained for the tuberculin test and a trained veterinarian to diagnose and detect the disease.

In discussing the case, which is one of the most striking of its kind, Doctor Jones expressed the opinion that the presence of tubercle bacilli in the milk of the cow was extremely probable, if not inevitable, judging from the close proximity of the lesions to the milk duct. It was the natural channel into which discharges of the bacilli would drain, especially during manipulation of the udder and teat in milking.

The milk of the cow had been mixed with that of the rest of the herd and sold raw, locally, as well as being used by the owner. His family, however, consisted only of adults. The test was the first one made of his cattle. The owner is a progressive dairyman and a believer in the tuberculin test. The detection and removal of the cow was gratifying to him, though the indemnity he received was less than half the cost of replacing the animal. He had noticed that the cow had a sore teat but believed it was due to a minor injury, not suspecting tuberculosis.

"This case," Doctor Jones remarked, "shows the value of the tuberculin test in removing sources of infection to milk supplies and in freeing healthy cattle of the herd and locality from the menace of a diseased animal. The source

of infection is not definitely known, but the germs probably entered through a scratch or abrasion of the organ affected. The sanitary conditions in the locality are unusually bad during the winter months, which shows also the great importance of sanitary measures in keeping tuberculosis out of a healthy herd, to say nothing of preventing its spread in one containing diseased or untested cattle.

"An incident of the kind described," he continued, "though unfortunate, helps to impress on cattle owners the serious nature of the disease and the importance of combating it through tuberculin testing and sanitation."

OBJECTIONABLE ODOR OF COW'S BREATH AND MILK

Having received a call from a man living in a small town to examine a cow, I found on arrival that the cow was a high grade Jersey, six years old, in fair condition. Six weeks previous to my visit, she had given birth normally to a healthy calf. It was noticed for a week or ten days after parturition that there was a sanguineous discharge from the vagina, the cow was dull and her appetite poor. Then the discharge ceased, the appetite became better, and she gave three and a half gallons of milk daily. However, the owner was discriminating enough to observe that there was an objectionable odor to the cow's breath and that the same odor was discernible in the milk, which he said, "was due to a fever in the body." Because of the bad odor, he called for assistance.

On examination, I found the general appearance of the animal good, the countenance bright, temperature, pulse and respiration normal. The nauseating odor of the breath and milk was easily detected. It somewhat resembled that of wild onions. On inquiry it was ascertained that the cow was confined in a stable and small lot, and as there were no wild onions around, they were eliminated as a possible cause. Furthermore, the odor was not exactly typical of wild onions, only suggestive. The cow's ration consisted of a good dairy feed and soy bean hay mixed with native grasses, and it was not thought that the source of trouble lay in the feed.

The genital organs were then examined. With the right hand the feces, which were normal, were cleared out of the rectum. Then the left hand was introduced into the vagina. A small amount of mucus was present and the cervix felt normal. With the left hand grasping the cervix and the right hand in the rectum, it is easy to locate the uterus and trace out the horns to the ovaries. It was found that the uterus was contracted, there seemed to be no pus or other fluid present, and the fallopian tubes were normal. When the hand through the rectal wall contacted the right ovary, this organ proved to be cystic and was as large as a medium sized egg. The cyst was easily crushed and then the ovary felt to be very mangled. The left ovary was small and hard and was given a vigorous massage. Aside from placing a small handful of boric acid in the vagina, nothing further was done. In this case the only abnormality noted was the cystic ovary.

The owner reported that in two or three days the objectionable odor cleared away from the breath and milk and that the cow was in excellent shape.

This peculiar characteristic odor, particularly of the breath, is to be noted in many cases of genital disorders of cows and is oftentimes the only thing that an owner notices wrong. The odor is only a symptom, sometimes the only one, but more often when it is present there are other symptoms of genital disturbance, such as impaired appetite, unsteady gait, twitching and trembling of the muscles, continual licking of the sides of a building or the cow's own leg, stretching of the head, upward, backward or to the side, discharge from the vagina and a general languid condition.

Metritis with a sanguineous discharge, pyometra and cystic ovaries, have been found by the writer responsible for this objectionable odor. Invariably a correction of the malady removes the odor.

J. Howard Brown

Rich Square, N. C.

TREATMENT FOR CYSTIC OVARY

About two years ago, one of my clients who breeds the finest registered Jerseys in this territory, called me to treat his gold medal cow for failure to conceive. Examination revealed that the right ovary was cystic. I treated the animal for a number of months, giving this ovary much careful massage and breaking down the cysts. Still, we were unable to get her to breed.

Finally, after talking to several other veterinarians, most of whom advised against it, I decided to do a unilateral ovariotomy, removing the diseased ovary. This was done in the usual manner, leaving the healthy ovary. The cow made a quick and uneventful recovery.

She was bred several times before conceiving

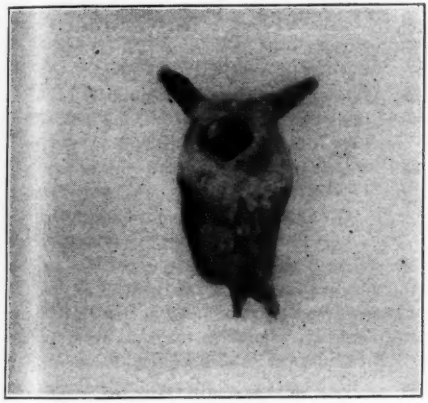
but is now ready to deliver a calf in a few days, after a lapse of over three years. I report this because I have never seen this operation recommended for unilateral cystic ovary in any of the journals or textbooks.

R. F. Whitlock, D. V. M.

Monett, Mo.

ABNORMAL OPENING IN SKULL OF HEIFER

The accompanying illustration shows a rather interesting case that I encountered in my practice some time ago. The subject was a one-year-old heifer, raised under ordinary farm conditions. She was turned out to water with the other cattle on the farm, the owner remaining in the barn for thirty or forty minutes, and when he went into the yard, he discovered this animal down and in a comatose condition. He had her moved into the barn, where she remained unchanged until the next day, when I was sent for.



An examination revealed an opening of the cranium in front, and as the animal had been in an unconscious condition for some eighteen hours, I considered it a hopeless case. On cutting through the skin and underlying tissue, I came to the dura mater, and ended the animal's existence by forcing my finger into the brain. The illustration shows the opening as it appeared in the skull.

I have never before seen or read of any such abnormality. The strange part is how the animal managed to live mingling with other cattle for a year without any protection to the brain except that furnished by the skin.

D. J. Halloran

Oconto, Wis.

COW RESENTS RESTRAINT

On February 4th I was called to see a two-year-old grade heifer that the manager said he thought was about due to freshen and "with a large mass about the size of a man's head sticking out behind" as he expressed it.

On arrival I found the heifer in a stall, standing perfectly quiet. I made an examination and found a simple prolapse of the vagina. I asked for some warm water in a clean bucket and thought we would soon have the patient fixed up all right. The manager returned with the water, and I told him while I was getting ready he had better put a rope on the cow and tie her head up real short as it would be necessary to confine her before starting the work. Then he was instructed to get a piece of timber, 2x4, and run it through a crack in the stall along the side of the animal to prevent her twisting around.

He got the timber and proceeded to put it into place from the outside, two of us having gone into the stable. When the heifer heard the timber scraping through the crack and saw it slipping along her side, it seemed to scare her into a fit. She began to rear up as high as the rope would allow her and to bellow and bawl at every breath. It began to look as if something was going to happen soon, and something did, for about that time the rope broke, and in an instant there was no one in the stable but the wild cow. As soon as we went through the door, the man on the outside slammed it shut and we tried to help him hold it, for I had an idea that the cow was going to make a charge for it. No sooner had I thought this than it was done. The animal came against the door with full force and with all the power and rage in her body. As the door flew open, everybody made a dive for safety. One of the men was a bit slow in getting away, being handicapped in running by a long-tailed overcoat, and this the cow took advantage of, making a beeline for him. Some one shouted to him that the cow was on his heels, and he seemed to take wings, for suddenly his overcoat spread straight out behind him and he told his feet to help his body, and as he reached the fence and attempted to go over, the cow just hurried him up a bit with the tip of one horn.

There was a good fence around the barn, so we thought we still had the heifer, and after letting her cool off a bit and quiet down somewhat, we tried to get her into the stall again, and again she flew into a rage and made a break for the lot gate, which was we thought securely fastened, but the animal's sudden at-

tack soon proved it otherwise. When the heifer cleared the gate, she made straight for the open country, and as it was dark we decided to wait until morning before proceeding further. The foreman said he would put some men on horses and try to round her up but that I need not come again until further notice as he was not sure of finding the patient.

I fully expected to get a message the next day to come to complete the job that had been started the night before, but the day passed and no message came. So did the next day and the next, when I decided that the cow had run off and died from fright and neglect.

But in just sixteen days from that night, I received a message to come out in the morning as they had at last gotten the cow in the stall again. Early the next morning I drove out, expecting to find the heifer in a terrible fix and about dead. On arrival I went to the barn and found the animal very much alive and about as well as a cow ever gets to be. As we approached, she made several attempts to get out, but finally I got two ¾-inch ropes on her head and cross-tied her in the stall. All the time she was cutting up and trying to fight as fiercely as ever. When the timber was put along her side, she went through all the performances of the first night, but this time we had her confined so she could not get away.

The vagina had made no further prolapse and with the exception of cracking and drying of the exposed parts which were beginning to slough some, it was in a fair condition I cleansed it as much as possible, greased it good with carbolated vaselin and returned it into place, retaining it with labial sutures, which I instructed the caretaker to remove in twenty-four hours, providing there was no straining.

A week later I was called to see the cow again, being informed that she was in labor and it seemed that she could not deliver the calf without help. I found the cow as wild as ever Meanwhile she had dropped a dead calf, but the placenta was retained. So I told the manager that while I was there I had better clean her up. Then we had to go through with the same roping and tying process as on previous occasions, after which I had but little trouble in removing the placenta, which was somewhat necrotic and had a very foul odor. I douched the uterus with a potassium permanganate solution. Then I got out of the stall and told them to turn the animal loose and to keep her there for several days, allowing just one man to look after her until she became more gentle. I saw the manager later, and he said the cow was shy of strangers but that he could handle her without any trouble and she was giving about three gallons of milk per day.

J. C. Freeman, D. V. M.

Youngsville, N. C.

MINERAL DEFICIENCY

Depraved appetite causing animals to swallow bodies which cannot properly be described as food, is frequent. This condition is most common in adult animals of the bovine species, dairy cattle especially, but is also found in sheep and swine.

The consequences are sometimes very serious, so that although depraved appetite does not represent a well defined morbid entity, it is important to be in a position to remedy it. The cause is a deficiency of mineral elements in the rations or feed.

The symptoms may be divided into two phases. In the first phase, the animals still preserve their appetite, but whenever they have an opportunity, they eat earth sand manure, bedding saturated with urine, plaster, etc. They lick the walls, the boarding, the mangers and trees; chew and swallow old shoes, harness, sacks; in fact, they will eat almost anything. This phase may continue for a long time, three or four months or more, providing no acute complications result from the eating of such foreign material There is no fever, but the appetite although well preserved, is often capricious, and the ordinary food is eaten slowly.

The second phase frequently marks the development of complications produced by the passage, contact or prolonged sojourn of various materials in the digestive tract. Fever appears, little marked as a rule, but continuous in character. The appetite is diminished, the animal becomes thin in flesh, the secretions of milk diminish, the hair becomes rough and dry and loses its lustre, and signs of gastro-enteritis may be noted. The depraved appetite still continues. Rags, decomposing or filthy materials, pieces of old shoes, etc., are eaten, and it is not surprising that such substances should have an unfavorable effect on the mucous membrane of the digestive tract. The wasting process slowly leads to marked emaciation, and after an interval of six months or a year or even two years, the patients die in a state of complete exhaustion.

The diagnosis presents no difficulty. It is purely a case of deficiency of mineral elements. The depraved appetite shows a craving, or a calling of the body for something that is not being supplied in the regular feed. The prog-

nosis of this condition is grave, because it shows a depletion of the life giving minerals of the body. This description applies to sheep and swine as well as cattle.

Swine root as if hunting something they cannot find and will eat wood or almost anything. The hair gets rough, they become thin in flesh and walk as if they were stiff and sore, or as if they had rheumatism. They often break down in the back or drag their hips, being unable to rise on their hind legs. This trouble is often and wrongly called kidney worm disease. Sows with this deficiency disease may give birth to hairless pigs. This happens frequently, or more frequently the pigs may be little, weakly, runty fellows not worth raising.

Cows with this disease have little, puny calves not fully matured, and I am personally of the opinion that 65 per cent of abortion disease and retained placenta is due primarily to mineral deficiency. The depraved appetite in itself is proof of a craving for something the body is calling for and not getting. It is the mineral elements that are not in the feed today that are so essential to life and the building of bone, muscle and the production of milk.

Why do we use fertilizer on our soil today? Because land that has been excessively cultivated for years has had essential mineral elements taken out of it.

That is the reason our live stock of today need a standard mineral food mixed with their regular feed or placed where they may have access to it at all times. I wish I could show all the dairymen and sheep and swine breeders of this country a bunch of cattle, sheep and swine before and thirty days after feeding them a standard mineral feed.

I have been prescribing mineral feed for my clients' live stock for the past five years, and I have seen abortion disease clear up from no other treatment than minerals mixed and fed with the regular ration. Cows fed a mineral feed will increase rapidly in milk flow and will have larger, stronger and more vigorous calves. Sows will have larger, stronger pigs and will not have hairless pigs, neither will they have the so-called kidney worm disease.

Depraved appetite, licking habit, or as it is rightly termed, deficiency disease, is far reaching among live stock. There is one answer, one cure, and only one preventive, and that is a standard mineral mixture or feed with the regular grain ration.

Literature: Moussu and Dollar, Chapter IV, page 158; E. Wallis Hoare, Vol. II, page 397; Hutyra and Marek, Vol. I, page 1023; Law, Vol. II, page 76; Friedberger and Frohner's Veterinary Pathology, Vol. I, page 42-55.

W. R. Morgan

Jeffersontown, Ky.

Fatalities in cattle following the feeding of sweet clover hay are relatively common. It has been demonstrated that molds growing in the pith of the coarser stems of the sweet clover will produce similar results in experimental animals and it is probable that molds or their products are the cause of this trouble. The disease is characterized by extensive tissue hemorrhages in any part of the body but more particularly in the subcutum. This disease should be differentiated from anthrax, hemorrhagic septicemia, blackleg and malignant edema.

VIOLIN STRINGS IN TEAT SURGERY

"Spider" and injuries to cows' teats have been and are now the source of much trouble and loss to the dairy herd owner and have caused me much anxiety as I have always practiced in a dairy locality.

When I started to practice, I would operate on cows' teats and remove the obstruction, allowing the milk to flow freely, and the owner and myself would feel fine when we saw the quarter so easily milked dry. But we were usually sorely disappointed afterwards to find that infection had set in, and nearly always the usefulness of the quarter was lost and sometimes the cow.

I was afraid to open the duct sufficient to allow drainage for the inflammatory exudate which is always deposited at the seat of operation, and I never had success with milk tubes and teat plugs.

However, for some time now I have found that the natural opening of the duct can be enlarged by operation, and after healing has taken place it will be serviceable again unless too much of the sphincter muscle has been removed, and as to keeping the duct open while healing is taking place, I have the owner use plugs of catgut violin string. Cut the string long enough so that when doubled and squeezed together with a twisting motion, it can easily be inserted past the seat of trouble. This is animal tissue, and although very dry and firm, it has to remain only a few minutes in the moisture of the warm teat until it is very soft and non-irritating. After the plug is prepared, it is dipped in tincture of iodin which sterilizes

the catgut, and I think iodin is one of the best agents to be used on the area of operation. Always the two ends of the string are left sticking out far enough so that the attendant can pull out the plug before milking, after which he inserts a new plug.

This works fine when a cow steps on or in any way injures the end of a teat as it always keeps the duct open. In such a case a little ointment or vaselin may be applied to prevent the formation of a dry scab.

I started this idea of treatment three years ago, and now when anyone asks to buy a violin string in this town, the dealer will ask if it is for the cow or the fiddle as they sell a great many more for the former.

T. E. Sillick

Neillsville, Wis.

RUMENOTOMY FOR THE RELIEF OF TRAUMATIC PERICARDITIS

In the typical cases of traumatic pericarditis wherein a positive diagnosis can be made before pathological changes have occurred sufficient to cause the death of the animal, I am a firm believer in rumenotomy as a means of relieving this condition. In advanced cases, this method of procedure would be futile, owing to the extreme hypertrophy of the heart and irreparable damage to the lungs and other organs as sometimes found on postmortem examination. Many times the veterinarian is unable to render a positive diagnosis until such lesions are beyond repair, and in such cases, of course, rumenotomy would be contraindicated. However, when an early diagnosis of this disorder is possible, rumenotomy for its relief offers a chance for the life of the patient, while failure to do anything towards its relief means certain death.

I will attempt to describe a case which occurred in my practice a short time ago and one upon which I operated.

The owner called at my office one evening, stating that he had a seven-year-old purebred Jersey cow that was ailing and wished I would drive out and see her. This cow was being fed clover and timothy hay and about a gallon of shelled corn and oats night and morning. She had dropped a calf two months previous, was giving a good flow of milk up until a few days before I was called on the case, and had never shown previous illness. According to the owner, the first signs of illness noted were a moist cough and stertorous breathing with some inappetence and a gradual diminution in the milk flow. The morning before I was called, the cow had refused all feed and seemed stiff in her front parts.

After obtaining the above history of the case, I drove out to the client's place and examined the cow. The following symptoms were revealed: dull expression of the eyes; elbows slightly extended from the chest wall; stertorous breathing with respiration increased to about twice that of normal; frequently the animal would cough, evincing pain; pulse 115 per minute; temperature 102°.5 F.; slight edema between the forelegs; distinct jugular pulse noted. The animal was very reluctant about moving and when forced to do so, acted stiff in the front parts, emitting a grunt with each step. The stethoscope revealed the presence of some fluid around the heart, also some pleurisy and pneumonia on the left side.

A diagnosis of traumatic pericarditis was made, and the possibilities of relieving the condition were explained to the owner, to which he heartily consented.

The animal was given an ounce and a half of chloral hydrate per rectum, and as soon as symptoms of drowsiness appeared, was cast on the right side in the usual manner. The surgical field in the left flank was thoroughly disinfected and painted with tincture of iodin. The usual procedure followed in rumenotomy to relieve impaction was pursued in this case.

After the rumen had been emptied of its bulky contents, the right hand was inserted into the reticulum. This necessitated inserting the arm entirely to the shoulder through the left flank incision. After a few exploratory motions with the hand along the anterior wall of the reticulum, I came in contact with a sharp object which was penetrating the reticular wall in a direction towards the diaphragm. This object was grasped between the fingers, and by applying light traction was withdrawn from the reticular wall and brought out through the flank incision. On examination it proved to be one-half of a large staple and measured approximately three inches in length. Only about one-half inch of the staple could be felt on the interior of the reticulum.

Satisfied that I had removed the offending object, the wound was cleansed as thoroughly as possible and the wall of the rumen sutured with chromic gut. The peritoneum was also sutured with catgut and the muscles and skin with silk, an opening being left at the lower end of the incision for drainage.

The cow was then released from restraint, and she immediately rolled up on her sternum, acting but little worse after the ordeal she had just experienced. Twenty-five c.c. of camphorated oil was administered intramuscularly and some nux vomica left with the owner to be given in two-dram doses every three hours. Advising the owner that I would see the cow the next morning, I proceeded back to town.

On the following morning, not much change was noted in the animal's condition. The owner stated that about two hours after the operation, the cow had gotten to her feet and drank a small amount of water. She also drank some water the next day but refused all feed.

From the third day until the eighth, the cow showed marked improvement. There was decided improvement in the heart action and respiration, and she developed a pretty good appetite. I had her placed on a restricted diet of laxative feeds. The outlook for recovery was bright, but on the eighth day the owner informed me that there was some swelling developing around the operative wound and that the cow would not eat that day.

I drove out to the client's place and made an examination, when I found that infection had gained entrance to the wound due to a lack of proper care on the part of the owner. The animal had a dejected appearance and showed all the symptoms of a developing peritonitis. She died on the fifteenth day after the operation despite every effort to save her.

On necropsy the following lesions were observed. Diffuse peritonitis of both the parietal and visceral peritoneum. On opening the thoracic cavity, some adhesions of the pleurae on the left side were noted, also some pneumonia of the left lung, apparently in the stage of resolution. There was also a slight hypertrophy of the heart with some exudate present in the pericardial sac. Inflammation of the diaphragm in the region approximating the reticulum and also an inflammatory condition of the reticulum were present. These lesions were supposedly due to the foreign body which I had removed during the operation but were not of a nature sufficient to cause the death of the animal.

Peritonitis in this case was the immediate cause of death, and I fully believe that if the owner had followed instructions and kept infection from gaining entrance to the operative wound, the cow would have made a complete recovery.

W. B. Chapman, D. V. M.

Powersville, Mo.

Triplets, delivered by Dr. W. E. Phelps, City Veterinarian, Redlands, Cal., April 16, 1925. Owned by Singleton & Haskell Dairy Ranch, El Casco, Cal.

HEMORRHAGE IN BULL FED ON SWEET CLOVER

On April 15th at 5 p. m., I received a telephone call from one of my clients living six miles from town to come out at once as his registered Guernsey bull was bleeding to death. The owner seemed so excited that I did not take time to ask any details of the case but jumped in my car and hurried out, expecting to find an injury of some kind or a wire cut.

I arrived at the farm just twenty minutes after receiving the call, although the client said it seemed like two hours to him. He took me to the barn and directed me to a fine year-old bull, which had been tuberculin tested and ear-tagged some months before. That morning the animal had gotten the ear-tag caught on the fence and torn it out, making a small hole, about the size of a lead pencil, and that was where the blood was coming from. Blood was spurting from the hole and had been all day. The bull's shoulders were covered with blood and there was considerable on the floor around him. In fact, he was growing weak and showing the effects of the loss of blood. The owner stated he had tried all day to stop the bleeding, but not being successful, he knew something else must be done soon or he would lose the animal.

I cleansed the ear thoroughly with soap and water and cauterized the edges of the hole on both sides of the ear. I next applied an astringent healing powder, which proved successful in stopping the hemorrhage.

I was very much surprised that a small wound like that should give so much trouble and present such difficulty in stopping the hemorrhage,

and I began to suspect there must be a cause. I asked the owner if he was feeding sweet clover hay, and he replied that he was and that he kept a rack full before the animals all the time. We investigated the hay and found it to be of a rather moldy type. As I have had considerable experience with sweet clover poisoning, I at once decided that this bull was bordering on a case of that kind, this being the cause for the extensive hemorrhage from such a small abrasion. I advised the client to feed sparingly of the hay. I also advised him against castrating or dehorning any of his calves that were feeding on the hay for fear they would bleed to death after the operation.

I might add that another client of mine who recently castrated twelve calves that had been fed on sweet clover hay all winter, lost eight of the twelve from hemorrhage, and about a month later, five of his herd came down with sweet clover poisoning.

W. Fleenor, D. V. M.

Fairmount, N. D.

THE STOMACH TUBE IN AZOTURIA

(Report awarded 2nd prize)

A frank confession is said to be good for the soul, and thinking the following might also be of benefit to some of my fellow conspirators in veterinary practice, I relate this case report, together with a brief dissertation on the same.

About 2:30 one afternoon in corn planting time, I received a very urgent call, the client stating his "horse was just crazy," and to come as quickly as I could. It was about eight miles and a rather rough road, but old Liz and I arrived in about half an hour. Of course, I had already diagnosed the case before my arrival as acute gastric flatulence, and on seeing the patient, this diagnosis seemed to be confirmed. The mare was surely in a bad way. Her expression was anxious, nostrils dilated. She would make an effort to rise but when partly up would fall back "ker-slam" and almost at once roll up on her sternum and try it again. She was in a lather of sweat and in very great pain. On inquiry it was learned that she had worked that morning and was taken sick about an hour after having eaten her full regular meal of corn and hay.

The stomach tube was passed without further ceremony but attended with considerable gymnastics on our part. However, we got it down, but contrary to my expectations, we got no eruption of gas through it. Yet, by this time, the mare had become somewhat more easy, which might mean gastric rupture, so I proceeded with a more careful examination. The pulse was quick but of fairly good character. The conjunctiva was no more reddened than one would expect in a patient beating and slamming around as this mare had been doing. It did not have that underlying injected appearance it has in ruptures and torsions. Then, too, I could find no muscular tremors. About this time, as the patient made an effort to get up, I noticed that she had very little use of her hind parts, and on palpation I found the gluteal muscles of both sides almost rigid. The pectoral group and also the muscles of the forearm seemed tense and hard. By exerting pressure on the urinary bladder per rectum, I expelled a gallon or more of as pretty hemoglobinated urine as one ever saw. Two tablets of lobelin sulphate were now administered hypodermically.

I still had the stomach tube in place, so not wishing to entirely lose all our effort, and at the same time remembering that azoturia was primarily due to faulty metabolism and was therefore a full brother to indigestion anyhow, I proceeded to wash out the stomach good—first, because I already had the tube in situ, and second, as an experiment. The more I washed, the better I felt about it. The stomach contents, mostly corn, had a very sour and almost acrid odor. We did not measure our results, but the mare was now noticeably resting very much easier, so we worked with comparative ease and continued until the return flow of warm water was clear. Once during the procedure we had to wait until more water was heated, so that the tube was in place a full half hour or longer. Before withdrawing it, a bucketful of warm water containing about six ounces of bicarbonate of soda (all I had), two ounces of spirits of turpentine and one-half ounce of fluid extract of nux vomica, was pumped in and allowed to remain.

In our efforts to roll the mare up on her sternum and bolster her up in that position, it was noted that the front limbs were just about as stiff and useless as the hind ones. However, we finally got her fixed more or less comfortably with her front legs extended like a dog's, as we could not keep them flexed under her in the natural position of a horse when lying down. It was now about four o'clock and I had another call farther down the road, so I left with instructions to keep the mare as comfortable and quiet as possible, well blanketed and bolstered up.

I returned about six p. m., and was astounded to find the mare not only up on her feet but

being led about the lot. The owner asked if it was safe to lead her home, about two miles. Needless to say, I stopped the exercise at once, had her put in a warm stable and well blanketed with instructions to keep her there until the next evening, giving no feed that night and no work for two or three days. Her recovery was uneventful and complete.

Now for the dissertation. Following my graduation in 1914, I went to Texas and into partnership with an old established practitioner. Just after the Xmas holidays, which in the South are celebrated by a full week or ten days of revelry, a contractor started his teams back to work. Before noon we had our hospital full and half of an adjoining stable filled with azoturia patients. The contractor got the chief of police and came around to arrest "somebody or something—may be the horses were poisoned." I do not remember our line of treatment in detail as outlined by my wily partner, except it was based on the usual procedure in acute indigestion, and every one of those cases recovered.

We were all advised to "Buy a Bale" the next spring, and though business was fair, collections were not, so I migrated to southern Illinois, and that fall and winter I did not lose any azoturia cases. I felt real smart, too; in fact, so smart that I fooled a young lady into marrying me, after which event we went to sojourn in western Pennsylvania. Well, out of my next fifty or more cases of azoturia, I did not save one-half of them. Neither would oxalic acid nor Azolysin save them for me.

Later, entering the veterinary corps and traveling somewhat extensively, I became convinced that paralytic hemoglobinemia is a much more fatal disease in the more frigid zones than it is in the more temperate zones, also that the severity of the attack is in direct proportion to the severity of the cold, i. e., if on a rather snappy morning a horse goes down and later in the day the weather warms up and the following night is not so cold as the preceding one, then that case is more apt to recover than if it went down in a falling temperature. I am speaking, of course, of those cases where adequate hospitalization is not available.

But to return to my first experience with the stomach tube in azoturia. I now use it on every case and think it almost as essential here and equally as clearly indicated as in the treatment of gastric indigestion. I find now that my patients suffer very much less since as soon as the stomach is well flushed the pain ceases, and also their recovery takes place in less than half the time they were formerly down. Decubitus is unknown in these cases of azoturia since I have used the tube.

However, as previously stated, climatic conditions make a vast difference in the severity of this disease, and our climate here is the best in the States; but nevertheless, should I ever return north and meet up with another case of azoturia, my stomach tube would be the first gun fired, and I would expect a satisfactory recovery.

In conclusion, I will state that in my estimation, in any gastric or intestinal disorder or in any disease related thereto, the stomach tube will afford more prompt and efficient relief than any drug. That it is not so generally used as the hypodermic needle, is simply because it is not nearly so handy and is a whole lot more of a job.

John M. Kerr, D. V. M.
Washington, N. C.

GASTRO-ENTERITIS FROM MOLDY ENSILAGE

I am located in a fruit section, where up until about four years ago the farmers did not keep more than one or two head of cattle. Consequently, few silos were present on the farms. However, these fruit farmers finally concluded they would get more cows, which would give them something to do in the winter and also the manure would greatly assist in enriching their orchards. So silos began to spring up over night it seemed, and then trouble began.

In a short time I commenced to get numerous calls to see horses with "colic." The history in these cases was that the farmer found some ensilage that was moldy and he threw it out in the barnyard, where the affected animal had been seen eating it.

The symptoms usually noted were as follows: The animal was in intense pain and would hardly stand still long enough for a thorough examination. Usually there was intense sweating, the bloating was often severe, the head was lowered when standing, and the animal often dropped down very quickly. The pulse was much higher than in ordinary indigestion, respiration also very fast, membranes very badly reddened, peristalsis active in most cases.

At first I treated these cases along the same lines as indigestion, but the results were anything but satisfactory, so I began to inquire of other veterinarians and found that few of them knew of any successful procedure, while most of them had had few cases of this kind. Hence, I determined to try to find some way to save these unfortunate horses.

Finally I worked out the following treatment, which has been used on over forty horses that have been known to have eaten moldy ensilage, and there have been but four deaths, while with all other methods, I believe, the fatality would have been fifty per cent.

The animal is first given a grain of morphin or lobelin sulphate and then a stomach tube is inserted in the nostril and all the water possible pumped into the animal's stomach, but in the first pailful one ounce of concentrated formaldehyd is added. Of course, in the cases where bloating is severe, I tap the patient, and in these cases several gallons of water with the formalin in it is siphoned into this opening through the trocar. Relief is not sudden, but in about twelve hours the animal is nearly back to normal in most cases.

If any one can give me any more information on this serious but apparently local disease, I certainly would appreciate the information. Evidently it is not widespread, at least in New York state.

Harry Greene

Brockport, N. Y.

OBSCURE LAMENESS IN A MULE

Subject: gray mule, eight years old and in good condition. I was called by a wholesale grocery house to see this animal with the report that he had been slightly lame in the left hind leg for two days. I examined him but could find no sensitiveness, only a slight distension of the bursae of the fetlock region.

Diagnosis: After watching the mule at rest, walking and trotting, I reserved my diagnosis. The positions of holding and carrying were not constant. I kept him under observation for three days, during which time he got no better and no worse, but was losing flesh slightly.

Treatment: The animal was placed on large doses of sodium cacodylate and the fetlock joint rubbed twice daily with a mixture of ichthyol, iodin and glycerin. This treatment was kept up for ten days without any signs of improvement. At this time I called two other veterinarians in consultation. We all agreed that the trouble was in the fetlock joint, and one advised firing with the actual cautery. This was done and repeated once. After thirty days, there was still no improvement, so I resorted to blistering at regular intervals with mercury and cantharides. After another thirty days and no improvement, I was ready to quit.

There was some enlargement of the joint but no contraction of the tendons. I advised the owner to place the mule on pasture, which was done, but to date there is no improvement, although the condition is very little worse than when I first saw it. Aside from this, the mule is in good shape. The owner was satisfied with the work I did, but I am not and still wonder what the real trouble was.

R. H. Herron

Bainbridge, Ga.

EQUINE PLASTIC SURGERY

During the fall I was called to examine an animal which showed a papilloma (afterwards verified by laboratory diagnosis) of the membrana nictitans, the inferior and the superior eyelids of the left eye. History of previous injury could not be established, and injury due to mechanical or chemical influences resulting from attempted home treatment of an opacity or injury to the cornea, could not be proved. The animal, a Welsh pony, in the best years of service, was used by the owner's boy to ride to and from school, which renders the anamnesis nearly useless and hopeless.

At the time of examination, the tumor had reached the size of an orange, completely obliterating the eyeball and protruding over and above the supraorbital process of the frontal bone as well as over the nasal canthus of the eye. Later on it was found that a complete eversion of both the upper and the lower lid had taken place. The body of the tumor was raw and bleeding although not as painful to touch as might be expected. A pussy discharge emanated from the tumor, encrustations of serum, pus and exudate covering it in parts, exhibiting a hard dried surface in places. Closer examination revealed numerous larvae of the Lucilia macellaria variety embodied in the tumor, by their presence adding very much to the unhealthy and ungainly appearance of the animal.

A tentative diagnosis was made of papilloma involving the membrana nictitans, the upper and the lower eyelids. The prognosis was guarded, and the owner was advised that laboratory examination was necessary before final diagnosis as well as prognosis could be established.

With a view toward an early radical operation, ablation and resection if possible, I injected very carefully chloroform into the tumor to destroy the larvae. Of course, this treatment was only of a temporary and preparatory nature. A specimen was easily obtained, and microscopical examination enabled me to make the diagnosis positive and the prognosis fair.

First operation: Two days after the examination the operation was performed. The owner had been instructed to apply warm towels, saturated with boracic acid solution, to the affected eye of the animal. The subject was placed in a recumbent position, two sand sacks being used to hold the head in as convenient a position as possible and with a view to fixing it. The tumor as well as surrounding tissues was injected with a solution of 1½% Butyn (Abbott) with an addition of a few drops of epinephrin. Several minutes were allowed to elapse to insure proper anesthesia, during which time the operator sterilized his hands and the field again and caused the instrument tray, cotton plugs and sponges, dry and wet, to be placed conveniently and safely at hand.

The initial incision was made in a straight line extending from the external angle of the eye for a length of three inches. The instruments used were two rat-tooth forceps, several pairs of straight and curved hemostatic forceps, scissors, straight and curved. For dissection a razor blade was used, Ever Ready type with one cutting side and a bevelled and protected back. Dissection of the skin and subcutaneous tissue beginning at the farthest point of incision, showed that the pathological tissues and structures had already invaded the subcutaneous layers for a distance of two and a half inches from the external angle of the lids. Dissection of the lower eyelid was completed and then dissection of the upper eyelid began, when it was found that the tumor and pathological tissue although completely obstructing the cornua and everting the lid, did not extend any farther than to the middle of the upper eyelid. In the course of resection of the inferior lid, I found the whole of it as well as the membrana nictitans involved. Resection being as nearly completed as possible, I extended the incision in such a manner that a V-shaped segment was removed, the point being at the external end of the incision. Four sutures were set. Again I employed with very good results the silver plated copper wire furnished me at the clinic of Prof. N. Nielsen, Director of the Polyclinic of the Royal Veterinary College, Copenhagen, Denmark. On healing only a thin narrow line showing the incision remained. Healing was by first intention. The aspect of the upper eyelid after the correction was normal.

The cornua showed a marked opacity. The owner was advised to use hydrargyri chloridum mite and pulv. saccharum lactis, to be blown into the eye. The lids were anointed with unguentum hydrargyri oxidi flavi 2% morning and evening. The animal was kept in a dark stall with a view to counteract photophobia and resulting lacrimation.

There were doubts as to whether I succeeded in removing all pathological tissue, and the owner was advised that possibly a second operation would be necessary. Another reason for this was the impossibility to foretell correctly how much additional correction would be necessary to render both eyelids as nearly normal as possible. Treatment of the photophobia and opacity continued until the desired result was obtained.

Second operation: Three weeks later the animal showed a slight swelling in the inferior eyelid, ectropion being present to a large degree and very much lessening the effect of the correction of the superior lid. The animal was not thrown. The eyelid was injected as before and incisions were made in a wedge form, the point of the wedge extending two inches below the edge of the lid, the base being one-half and one inch in width. After the incision was made, a careful search for additional pathological tissues was made. The tissues were scraped, curetted and three wire sutures applied. Healing took place by first intention. In due time the stitches were removed, and re-examination showed complete correction of the defect of the lower lid.

H. J. Magens

Stewartville, Minn.

LOSSES FROM FEEDING CARCASSES TO LIVESTOCK

Failure to destroy or bury deeply the carcasses of animals, that die from natural causes, so that other animals can not have access to them, is responsible for the spread of much infection on farms. This warning, frequently given by veterinary specialists of the United States Department of Agriculture, is shown to be very important in connection with the eradication of tuberculosis.

In a recent investigation a farmer admitted having lost between 80 and 100 chickens from disease. He had thrown the dead fowls into the hog pen and had also hauled the cleanings from the chicken house into a field in which his hogs ran. Tuberculin testing showed about 25 per cent infection of tuberculosis among the fowls; and a sow that was tested with avian tuberculin proved to be tuberculous and indicated moreover that the infection was of the fowl type.

Finally I worked out the following treatment, which has been used on over forty horses that have been known to have eaten moldy ensilage, and there have been but four deaths, while with all other methods, I believe, the fatality would have been fifty per cent.

The animal is first given a grain of morphin or lobelin sulphate and then a stomach tube is inserted in the nostril and all the water possible pumped into the animal's stomach, but in the first pailful one ounce of concentrated formaldehyd is added. Of course, in the cases where bloating is severe, I tap the patient, and in these cases several gallons of water with the formalin in it is siphoned into this opening through the trocar. Relief is not sudden, but in about twelve hours the animal is nearly back to normal in most cases.

If any one can give me any more information on this serious but apparently local disease, I certainly would appreciate the information. Evidently it is not widespread, at least in New York state.

Harry Greene

Brockport, N. Y.

OBSCURE LAMENESS IN A MULE

Subject: gray mule, eight years old and in good condition. I was called by a wholesale grocery house to see this animal with the report that he had been slightly lame in the left hind leg for two days. I examined him but could find no sensitiveness, only a slight distension of the bursae of the fetlock region.

Diagnosis: After watching the mule at rest, walking and trotting, I reserved my diagnosis. The positions of holding and carrying were not constant. I kept him under observation for three days, during which time he got no better and no worse, but was losing flesh slightly.

Treatment: The animal was placed on large doses of sodium cacodylate and the fetlock joint rubbed twice daily with a mixture of ichthyol, iodin and glycerin. This treatment was kept up for ten days without any signs of improvement. At this time I called two other veterinarians in consultation. We all agreed that the trouble was in the fetlock joint, and one advised firing with the actual cautery. This was done and repeated once. After thirty days, there was still no improvement, so I resorted to blistering at regular intervals with mercury and cantharides. After another thirty days and no improvement, I was ready to quit.

There was some enlargement of the joint but no contraction of the tendons. I advised the owner to place the mule on pasture, which was done, but to date there is no improvement, although the condition is very little worse than when I first saw it. Aside from this, the mule is in good shape. The owner was satisfied with the work I did, but I am not and still wonder what the real trouble was.

R. H. Herron

Bainbridge, Ga.

EQUINE PLASTIC SURGERY

During the fall I was called to examine an animal which showed a papilloma (afterwards verified by laboratory diagnosis) of the membrana nictitans, the inferior and the superior eyelids of the left eye. History of previous injury could not be established, and injury due to mechanical or chemical influences resulting from attempted home treatment of an opacity or injury to the cornea, could not be proved. The animal, a Welsh pony, in the best years of service, was used by the owner's boy to ride to and from school, which renders the anamnesis nearly useless and hopeless.

At the time of examination, the tumor had reached the size of an orange, completely obliterating the eyeball and protruding over and above the supraorbital process of the frontal bone as well as over the nasal canthus of the eye. Later on it was found that a complete eversion of both the upper and the lower lid had taken place. The body of the tumor was raw and bleeding although not as painful to touch as might be expected. A pussy discharge emanated from the tumor, encrustations of serum, pus and exudate covering it in parts, exhibiting a hard dried surface in places. Closer examination revealed numerous larvae of the Lucilia macellaria variety embodied in the tumor, by their presence adding very much to the unhealthy and ungainly appearance of the animal.

A tentative diagnosis was made of papilloma involving the membrana nictitans, the upper and the lower eyelids. The prognosis was guarded, and the owner was advised that laboratory examination was necessary before final diagnosis as well as prognosis could be established.

With a view toward an early radical operation, ablation and resection if possible, I injected very carefully chloroform into the tumor to destroy the larvae. Of course, this treatment was only of a temporary and preparatory nature. A specimen was easily obtained, and microscopical examination enabled me to make the diagnosis positive and the prognosis fair.

First operation: Two days after the examination the operation was performed. The owner had been instructed to apply warm towels, saturated with boracic acid solution, to the affected eye of the animal. The subject was placed in a recumbent position, two sand sacks being used to hold the head in as convenient a position as possible and with a view to fixing it. The tumor as well as surrounding tissues was injected with a solution of 1½% Butyn (Abbott) with an addition of a few drops of epinephrin. Several minutes were allowed to elapse to insure proper anesthesia, during which time the operator sterilized his hands and the field again and caused the instrument tray, cotton plugs and sponges, dry and wet, to be placed conveniently and safely at hand.

The initial incision was made in a straight line extending from the external angle of the eye for a length of three inches. The instruments used were two rat-tooth forceps, several pairs of straight and curved hemostatic forceps, scissors, straight and curved. For dissection a razor blade was used, Ever Ready type with one cutting side and a bevelled and protected back. Dissection of the skin and subcutaneous tissue beginning at the farthest point of incision, showed that the pathological tissues and structures had already invaded the subcutaneous layers for a distance of two and a half inches from the external angle of the lids. Dissection of the lower eyelid was completed and then dissection of the upper eyelid began, when it was found that the tumor and pathological tissue although completely obstructing the cornua and everting the lid, did not extend any farther than to the middle of the upper eyelid. In the course of resection of the inferior lid, I found the whole of it as well as the membrana nictitans involved. Resection being as nearly completed as possible, I extended the incision in such a manner that a V-shaped segment was removed, the point being at the external end of the incision. Four sutures were set. Again I employed with very good results the silver plated copper wire furnished me at the clinic of Prof. N. Nielsen, Director of the Polyclinic of the Royal Veterinary College, Copenhagen, Denmark. On healing only a thin narrow line showing the incision remained. Healing was by first intention. The aspect of the upper eyelid after the correction was normal.

The cornua showed a marked opacity. The owner was advised to use hydrargyri chloridum mite and pulv. saccharum lactis, to be blown into the eye. The lids were anointed with unguentum hydrargyri oxidi flavi 2% morning and evening. The animal was kept in a dark stall with a view to counteract photophobia and resulting lacrimation.

There were doubts as to whether I succeeded in removing all pathological tissue, and the owner was advised that possibly a second operation would be necessary. Another reason for this was the impossibility to foretell correctly how much additional correction would be necessary to render both eyelids as nearly normal as possible. Treatment of the photophobia and opacity continued until the desired result was obtained.

Second operation: Three weeks later the animal showed a slight swelling in the inferior eyelid, ectropion being present to a large degree and very much lessening the effect of the correction of the superior lid. The animal was not thrown. The eyelid was injected as before and incisions were made in a wedge form, the point of the wedge extending two inches below the edge of the lid, the base being one-half and one inch in width. After the incision was made, a careful search for additional pathological tissues was made. The tissues were scraped, curetted and three wire sutures applied. Healing took place by first intention. In due time the stitches were removed, and re-examination showed complete correction of the defect of the lower lid.

H. J. Magens

Stewartville, Minn.

LOSSES FROM FEEDING CARCASSES TO LIVESTOCK

Failure to destroy or bury deeply the carcasses of animals, that die from natural causes, so that other animals can not have access to them, is responsible for the spread of much infection on farms. This warning, frequently given by veterinary specialists of the United States Department of Agriculture, is shown to be very important in connection with the eradication of tuberculosis.

In a recent investigation a farmer admitted having lost between 80 and 100 chickens from disease. He had thrown the dead fowls into the hog pen and had also hauled the cleanings from the chicken house into a field in which his hogs ran. Tuberculin testing showed about 25 per cent infection of tuberculosis among the fowls; and a sow that was tested with avian tuberculin proved to be tuberculous and indicated moreover that the infection was of the fowl type.

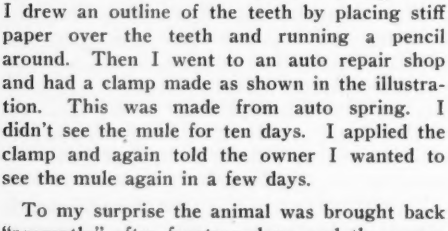
FRACTURED LOWER MANDIBLE IN A MULE

In the early spring of last year, a mule with a fracture between the lower middle incisors, was presented for treatment or "whatever I could do for him." The fracture occurred five or six days previously, and of course the bone was badly necrosed. The owner said, "Doc, you can't do nothing for that, can you?" And I was nearly of the same opinion, taking the necrosis into consideration.

It occurred to me that here was another place where baling wire would come in handy. I cleansed the crevice thoroughly with antiseptic and forceps, then placed the wire around the two corner incisors and twisted until I had the teeth as close together as when in their natural position. I gave the owner instructions as to how and what to feed and told him to bring the mule back in three or four days.

This gave me time to plan something that at least would look better than the baling wire. I drew an outline of the teeth by placing stiff paper over the teeth and running a pencil around. Then I went to an auto repair shop and had a clamp made as shown in the illustration. This was made from auto spring. I didn't see the mule for ten days. I applied the clamp and again told the owner I wanted to see the mule again in a few days.

To my surprise the animal was brought back "promptly" after fourteen days, and the owner wanted to know how much longer I wanted the



mule to wear "that d—— thing." On being questioned regarding the animal's ability to eat, the owner said, "Why, that mule can grind up anything he can get his mouth on."

The mule was in so much better shape physically that I hardly knew him. I removed the clamp and gave the mule an ear of corn and had him demonstrate his ability to chew to my own satisfaction. When first brought to me, each half of the animal's mandible worked back and forth independently of the other.

Fred H. Steele, D. V. M.

Huntsville, Ala.

Dr. H. J. MacCartney, Joplin, Mo., and his bull, Lycoon Flying Major.

PROLAPSE OF UTERUS AND RECTUM IN A SOW

In writing this case report, I do so because, although I have been off and on in a country practice for twenty years, I have never had a case like this before.

On February 14th one of my clients called me up on the telephone and gave the following information: A sow had farrowed a litter of eleven pigs on the evening of the 13th. The sow was apparently all right when he saw her late that night. When entering the barn the next morning he heard the young pigs squealing and went to the pen to investigate the trouble. The sow was lying stretched out, straining and paying no attention whatever to her young. The owner examined her and found as he stated to me over the telephone, "Doctor, my sow has thrown her whithers and back gut. Can you do her any good? If so, come right out."

On arrival I found the sow had a prolapse both of the rectum and uterus, also a nasty ragged tear near the anus extending downwards near the left lip of the vulva. The pen where the animal was confined was very dark and not very clean, so she was removed into the alleyway near the door where we could have a good light.

An old wooden trough was used for an operating table, one end raised to an angle of about 45 degrees. The patient was placed on her back in the trough, the front legs tied to posts in the

alleyway, and the hind legs tied forward underneath the trough. I then proceeded to examine the uterus and rectum. They certainly presented a nasty sight which would have been a shock to a young practitioner not accustomed to such things. The organs were covered with dirt and straw and badly inflamed.

The uterus was wiped clean with a weak solution of Sterilac, then covered over with Iodex. It was replaced with very little trouble, and two basswood skewers were put deep through the lips of the vulva and wound around in figure-eight fashion with sterilized hemp.

The rectum was then wiped clean, smeared all over with Iodex and replaced. The wound on the left side of the anus was thoroughly washed with 1-1000 bichlorid of mercury solution, trimmed and then stitched.

The sow was given two laxative tablets, the pen cleaned and the patient returned. Sloppy diet was recommended with a half teacupful of magnesium sulphate and three laxative tablets daily until the bowels moved freely.

I called the client on the telephone that evening, when he stated the sow was doing fairly well and had eaten some slop and milk with salts. The rectum was protruding about two inches, but the animal was straining very little. I called the client again on the morning of the 15th, when I was informed that the sow was hungry and feeding well, although the rectum was still protruding but not so much. I told the client to apply Iodex freely over the protrusion and leave it alone but to keep the pen clean.

On the morning of the 16th all prolapse had disappeared. The skewers were removed from the vulva and the wound smeared with Iodex. The sow came along fine, giving no trouble and raising her eleven pigs.

I have had considerable experience especially in horses and cattle with prolapse of the rectum and uterus, having a large country practice, and find that the following procedure works well in about 80 per cent of the cases, even though the parts have been prolapsed for a long time, in midwinter when they have become cold and badly swollen. The parts are sponged clean, then covered with lard or some astringent ointment (Iodex has proved the best with me), replaced, all feces removed manually for a few times with the arm and hand well greased, and a good purge given. This is far better than watery injections.

A peculiar thing about the case in the sow was that we could not find anything in the pen where the animal could have torn the anus, unless another sow in half of the pen separated with a slat gate reached through and did it.

P. K. Walters, V. S.

Thorndale, Ontario

SWINE OBSTETRICS

(Report awarded 4th prize)

It is often very difficult to deliver pigs from a sow, but the following are my methods.

When the passage is swollen and dry, I inject mineral oil either with a dose syringe or by a gravity tube and funnel. The amount depends upon the case. Often it is necessary to pull up the hind legs so the oil will remain in the passage.

When the pigs can be felt with the fingers and hand inserted into the vagina as far as space will permit, the case is easy. Using the Colson forceps, I snare the pig, and once these forceps are in place, the pig comes. Don't be in a hurry, just pull gently and steadily.

Sometimes the Colson forceps cannot be used because the loop refuses to pass over the parts. Then I use a pair of Decker's forceps. It is quite easy to place these on the pig. They are inserted closed, and as soon as the jaws are beyond the pelvis, they are opened and moved forward enough to enclose the pig's head or hind parts. The forceps are then squeezed together as tightly as possible and some instrument inserted between the handles to hold them securely in place. This little device relieves the hands from exerting pressure and still keeps the forceps firmly fastened over the pig. Another pair of Decker's forceps are then placed over the first pair and pressure applied. This will be sufficient to hold the pig, and the forceps will not slip off, for the jaws of the second forceps are placed over the jaws of the first.

It is sometimes necessary to have the farmer assist by holding the first pair of forceps while you apply the second pair. Enough pressure can be exerted upon the pig to crush the skull or pelvis, which assists in delivering a dead pig; but the main thing is that the forceps firmly grasp the pig, hold it, will not slip off, and by holding tight and exerting gentle but steady pressure, the pig will come.

When the pigs cannot be felt, the task is more difficult. By opening the forceps, pushing forward and rotating, it is often possible to reach the pig and grasp it in the jaws of the forceps. Then the task is easy—just use the method described above.

Harry L. Kidd

Grand Meadow, Minn.

TEAT FAILING TO HEAL

Some time ago I had occasion to cut a small tumor from the milk duct of a cow's teat. The incision was about one-half inch from the end of the teat. After several trials, I have failed to get the wound to heal. Would it be practical to cut off about one-half inch of the teat, as this length would be sufficient to correct the trouble?—F. K. M.

Reply: Cutting off about half an inch, or even a little more, of the end of the teat is common practice under such conditions. This operation was first recommended by Prof. Bang of Denmark.

TUBERCULOSIS IN A DOG

A Fox Terrier, three years old, came to our hospital with what appeared to be a slight digestive disturbance. Accompanying this, there was a little soreness of the right side of the neck and the right foreleg. In a few days the appetite returned, and the other symptoms were treated rather lightly and the case sent home.

The neck and leg remained unchanged, so the dog was brought back in a week. Applications of heat gave temporary relief but did not clear up the condition.

After a week or two, a swelling appeared on the neck and the soreness increased. It appeared to be an enlarged lymph gland or possibly involvement of the thyroid. Shortly the swelling seemed to soften and fluid could be detected. This was perhaps a month after the first signs of soreness. Lancing this, a half ounce or so of milky serum was found. The lance wound healed except for a pin-point opening, which continued to discharge perhaps 3 c.c. of fluid a day. When the opening became occluded, soreness increased. The dog assumed a stiff-legged gait in the forelegs and carried the head stiffly. When spoken to, he would either elevate the eyes or sit up on his haunches. At times he seemed to feel good and at other times he was loggy, but seemed to lose weight very gradually. For two months the lesion continued to drain.

Suspecting some gland infection, the neck was opened, and a small gland (apparently a lymph gland) was removed. This, though apparently normal, was at the upper end of the fistulous tract and was taken out as a matter of course. The animal seemed to gain a little weight for a time. The wound healed slowly until a small opening was left which did not heal.

After another month or so, the neck was reopened and explored from the point of the shoulder to the parotid region. The inner surface was merely a muscle cavity bathed in this fluid. Hoping to get healing from the inside, the cavity was packed with gauze and antiseptics. Healing was extremely slow. Some of the fluid had already been sent to a laboratory for examination with negative report. Again we took samples of the fluid and of the muscle and got the same report.

This time the wound was allowed to become infected, thinking it might slough out and heal. Large amounts of connective tissue sloughed out but to no avail. We suspected salivary fistula. By this time I had shown the dog to several physicians and surgeons. Each one was puzzled but suggested something. A sample was tested for saliva by the same laboratory and reported positive. We did not believe this, so we sent it to another laboratory where it proved not to be saliva, but they did not give anything constructive. They merely found a few different cocci, which we knew must be there as the wound was infected some. We thought of tuberculosis, actinomycosis, etc., and discarded each in turn.

The laboratory was so sure that quartz lamp rays would cause healing that the treatment was donated, but there was no change with two weeks' treatment, so it was stopped. By this time, eight months had elapsed, and the dog was getting more emaciated. He soon became rapidly worse. The wound was practically healed by now.

So many M. D.'s had seen the case that it was of great interest. Consequently, two human surgeons and the writer put the animal on the table for the last time in an endeavor to find the trouble or end the patient's life. We did the latter. On opening the neck this time, we found the animal literally rotten with tuberculosis. From the throat through the intestines and in every organ, we found quantities of caseated pus, etc.

The reader will no doubt wonder why a test was not run for tuberculosis in the beginning. The answer is that there was nothing positive to warrant it. Besides the animal seemed to be quite well most of the time. Each time the patient went home we thought we would put him to sleep next time, but time went on and we hated to do it, so it wasn't done. He was truly a noble little fellow, and if dogs have personalities, he had the record for a good one.

E. A. Ehmer

Seattle, Wash.

TREATMENT FOR STRYCHNIN POISONING OF DOGS

(Report awarded 3rd prize)

Strychnin poisoning in dogs is usually intentional or accidental and is due to strychnin or one of its salts, that most commonly used being the sulphate. The poison is either administered by wrapping a small amount of the powdered salt or tablets in liver or meat and placing where the animal can get it. Keeping this factor in mind it is advisable to caution clients to search the yard for other pieces of poisoned food or keep the dogs closely housed for several days. Conditions have been found of dogs eating poisoned bread or meat placed out for rats. Cases also have been treated where the dogs have been given tonic pills containing a strychnin salt.

Usually either the patient is taken to the hospital or we are called to see it shortly after the first symptoms appear, although in some cases not until some time after the first symptoms are noted. If the dog has a full stomach at the time the poisoned food is eaten, the symptoms are not so severe at the onset; however, this is reversed if the stomach is empty and the dosage taken is large. Severity of the convulsions, of course, depends upon the amount absorbed. Where people have tried to institute home treatment by pouring different fluids into the mouth, the prognosis is usually unfavorable.

Definition of drug: Strychnin—a white, bitter and poisonous crystalline alkaloid, $C_{21}H_{22}N_2O_2$, occurring in nux vomica, in various species of Strychnos, and in Ignatia. It has the properties of nux vomica and of ignatia. Pure strychnin is less often used than its salts: the sulphate, nitrate, phosphate, hydrochlorid and citrate are those principally used; the sulphate is more employed than any of the others.

General Symptoms: sudden muscular rigidity, stiffness of back of neck; uneasy startings, followed by tetanic convulsions: opisthotonos, feet everted: the slightest touch or breath of air originates convulsions: risus sardonicus, corners of mouth drawn back: eyes fixed, widely opened: respiration ceases during convulsions: cramplike muscular contractions; erections of penis; involuntary defecation and urination; consciousness preserved; jaws locked late in poisoning.

Treatment: First a hypodermic injection subcutaneously of apomorphin hydrochlorid, one-fifth of a grain, and one to three grains of morphin sulphate, the dosage of morphin being regulated according to the size of dog. The apomorphin is repeated in fifteen minutes if the dog does not empty the stomach. In another fifteen minutes if the stomach has not been emptied, the patient will be sufficiently relaxed to allow the passage of the stomach tube, and 10 to 20 grains of barbital (Abbott's) and 15 grains of tannic acid are dissolved in six ounces of water and introduced into the stomach through the tube. The same procedure is carried out if the stomach has been emptied although the barbital dosage is reduced to half. The clients are then informed, if the dog is treated at home, that the animal will lie around as if drunk for twenty-four to forty-eight hours, to keep all water away and offer no foods, but to allow the dog complete quiet by placing in a room to himself, and in twenty-four hours giving six to eight ounces of water by the tube. In forty-eight hours, we give a good dose of castor oil. Our results from this technic have been excellent.

J. G. Horning, D. V. M., and
A. J. McKee, D. V. M.
Houston, Texas.

FILARIA IMMITIS IN DOGS

A case report in the April issue, "Filaria immitis Cause of Post Operative Death in Dog," is of some interest. I encounter many of these cases in my practice. The veterinary editor of one of the kennel journals some time ago took to task a veterinarian in one of the Carolinas for telling a man that a dog was affected with heartworm. He said he had never heard of it, would want to know its name, and to show his great magnanimity, told the man who had written him about a sick shooting dog to kill the animal and have the veterinarian show him the worm. A client of mine asked me a number of times to get in touch with this so-called veterinary editor and relate to him the fact that these heartworms are not mythical. I didn't write to the veterinary editor, but I did write to the editor of the dog journal and told him I would be glad to send some worms at my expense from almost any breed of dog his veterinary editor would select.

This Filaria immitis is the cause in some cases of so-called "fright disease." Many things bring about this nervous condition, such as various intoxications and tapeworms. When tapeworms are found as the cause, there is usually a large number of them. In my opinion, roundworms have never produced it. Hookworm produces it rarely in spite of the opinions of some veterinarians. I have seen some young dogs that will become nervous at a dog show or if they hear an unusual sound like squirting a hose or the

explosion of a cannon cracker, hurdy gurdy music, etc. These dogs if spoken to in a low voice and consoled soon get over it unless they have gone some time. If they remain frightened for some time, the congested brain elevates the temperature, and along comes some veterinarian giving a deft shot of apomorphin or morphin, and away goes the dog. It is dangerous to give morphin or apomorphin to these cases with an unusually high temperature. If apomorphin is indicated, we use it in the high temperature cases after the dog or puppy has been cooled off either with a bath or wet towels wrapped around it or both. I have seen a lot of diverse causes produce this so-called fright condition. Often it is a premonitory symptom of distemper, and the case that may follow it is always in my experience a real case.

I have obtained large numbers of tapeworms from dogs taken suddenly with "running fits," and the patients came down with distemper a short time after. It is very possible that the infection producing distemper is present in the body and something bringing about a lowering of the animal's resistance will "let the distemper in." I have seen cases of distemper develop on plantations where the dog would never get away from the house, only members of the family would care for it, and perhaps a dog had not been kept in this particular place before for many years. Yet one goes there and finds a case of distemper. We observe cases of a very fulminant nature; some of these die in a few days. These are diagnosed as distemper; the nervous symptoms predominate. Sometimes I am of the opinion that we are grouping several diseases under the head of distemper. I have held necropsy on many of these unusual cases, always being on the alert not to confuse a case of intoxication from worms or something else as distemper (so-called).

Getting back to heartworms, I should not be surprised to learn of them in any region of the United States. I know they exist in Germany, because I have found them in recently arrived shepherd dogs. There is no doubt that they are found more generally in inundated sections. I have found this worm or a similar worm in the heart and other organs of animals other than dogs or the dog kind. It also may be possible that the human filaria is more prevalent than generally supposed.

This dog filaria is the cause of a large number of the cases of ascites we have down here. Ascites is quite common. One of the remarkable things about filariasis, and it may be due to a tolerance acquired by the host, is that an animal that has suffered for years from infestation with filaria, on necropsy will show perhaps only one worm or very few, while an animal that is not even suspected of harboring the worm will suddenly die and be found with a heart simply loaded with the worms, causing one to wonder how the dog's heart could function.

A short time ago we had three dogs at the hospital that died very suddenly, and necropsy disclosed the presence of a large number of these worms in each case. One of the animals was owned by the head of large hotel interests here and was being treated for a mild skin ailment when it suddenly toppled over and died in a convulsion. Another was owned by a foreign consul here. This was a big healthy Airedale that had recovered from pneumonia a year before. After a short walk the dog went into convulsions. A Dane that was as active for his size as the other two, romping and playing, toppled over and galloped a moment in lateral decubitis. Postmortem examination revealed over one hundred filariae.

Many dogs that die over night are found to have succumbed to this parasite. Several times I have had such dogs sent to the hospital for necropsy when the owners were sure the animals had been poisoned. There are some symptoms that reveal this condition even in the more unusual cases. Often these dogs show nothing abnormal except sometimes an unusual pulse and are afraid of night noises. The Dane previously referred to I learned had during his latter two years become such a coward at night when it thundered or about the Christmas holidays (these are celebrated down here with lots of fire works much as the Fourth of July in the North) that often members of the family would have to get up and take the dog into the house and comfort him, he was so scared.

We give neoarsphenamine to dogs suffering from filariasis, and it seems to be helpful. Of course, we appreciate that anything that would cause the adult worms to succumb would be inimical to the host. The neoarsphenamine either inhibits the development of the larvae or it brings about a degree of immunity in the host against the intoxication produced by the presence of the adult worms and larvae, or perhaps both. Sometimes I inject the solution intramuscularly, but most often it is injected into the saphenous vein. I have also injected this and similar agents into the femoral artery.

I have used sodium and iron cacodylate as well as atoxyl, etc. Neosalvarsan seems to be the best and quite an improvement over salvarsan. The technic of administration is nothing

very elaborate, but it must be carried out. The dog should be placed on a table, and we have given some dogs morphin to produce a degree of hypnosis. Several times almost pulseless dogs have rallied after being bolstered up with cardiac stimulants. We use Powers and Weightman's neosalvarsan.

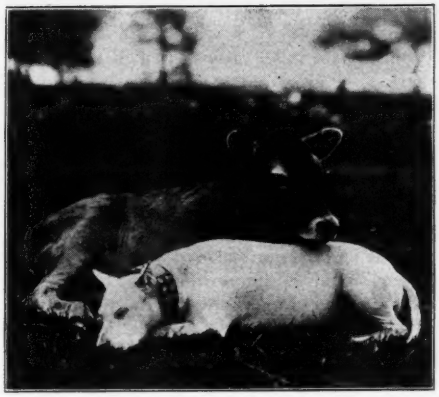
Atropin seems to be the best antispasmodic for the cough accompanying these cases in many instances, and dogs down here at least will take large doses of atropin. Textbooks give the dose of atropin for a dog as 1/120 to 1/60 of a grain. I have often given an eighth of a grain to as small a dog as a toy poodle. I treated an extremely old poodle that was kept up and barking until killed in an accident, the animal at a very advanced age surviving an attack of pneumonia. The administration of eighth-grain doses of atropin for the cough seemed to help this animal markedly. In filariasis there seems to be considerable mucus in the trachea and bronchial tubes, and atropin seems to be of benefit here in addition to stimulating the heart. The tablet usually is given at bedtime and again in the morning, and these two doses help remarkably in minimizing the cough. The mydriatic action under these conditions seems insignificant.

The ascites of filariasis (we always have a few such cases in the hospital) is treated largely in a dietetic way. Tapping occasionally is productive of fair to good results, but often it is lost time. Always in the dropsical cases, the liver is considerably enlarged. I have a case now in a seven-year-old fox terrier that I had great difficulty in persuading the owner to have tapped three years ago. I had not seen nor heard of the dog since until a few days ago when I was called to prescribe for the animal's "heartworm cough." The ascitic condition had never returned. However, it is dangerous to tap these cases promiscuously.

A tablet made by the Anedemin Chemical Co. of Chattanooga, Tenn., and called Anedemin is pretty good as a cardiac stimulant and diuretic in these ascites cases accompanying filariasis. It also is good because of its laxative properties. These tablets are sold through jobbers to the medical and veterinary professions. Digitalis and its glucosides seem contraindicated in many of these cases. I have four or five thousand "cardiac dilatation tablets" that I formerly used in these cases, but they are now employed for other and better indications.

W. J. Ratigan, V. M. D.

New Orleans, La.



"Pals" on the farm of Dr. A. W. Axford, Chester, N. J.

Rochaix reported a case of rabies in a man that had been given antirabic treatment about one year after exposure. The treatment was given promptly after exposure but the method of treatment and kind of vaccine were not indicated in the report. The rabies in the man was verified by an intramuscular injection of emulsion of bulbar substance into guinea pigs. This method of experimental inoculation is rather unusual. Such inoculations are usually made intraocularly or into the brain. Is it possible that there was an error in diagnosis not only in the man but also in the guinea pig?

ANESTHESIA IN FELINE OOPHORECTOMY

The local anesthetics used may be novocain or procain or Butyn. The animal is placed on the operating table and the operative field carefully cleansed, shaved and washed with an antiseptic solution. The anesthetic solution is injected around the operative field, and the incision made through this anesthetized space. Thus the pain impulses are blocked or prevented from being carried to the brain centers, which are saved from shock during the operation, and the patient comes through in much better condition. The nerve cells are not harassed and weakened by a constant bombardment of pain impulses after being anesthetized locally.

In general anesthesia the field of operation is injected with a 2 per cent solution of procain, then vaselin applied to the nostrils and ether administered. Do not use chloroform as it causes heart failure by inhibiting the action of the vagus nerve. H. M. C. tablets are also contraindicated in feline surgery as cats have

an idiosyncrasy for hyoscin which makes them delirious.

While cocain is still being used in veterinary surgery to a great extent, I prefer procain or novocain on account of its safety, procain being only about one-seventh as poisonous as cocain.

Charles J. Gruber

Ft. Wayne, Ind.

SPAYING A MALE CAT

Several months ago a lady called at the hospital and inquired as to where she could buy a black Persian cat. She was given the address of a breeder of such pets, and we later heard she purchased a female kitten.

Some months later this lady called on the telephone and asked about charges, etc., on spaying of cats, and the following morning brought a seven-months old Persian to the office, informing us that the cat went by the name of "Bertha" and was the one bought as a kitten from Mrs. So-and-So. Would we please use every precaution in the operation as she was very fond of Bertha?

Spaying of cats is not the thing we are fondest of, so in order to get the "crime" off our minds, we set out for its commission, placed "Bertha" under complete anesthesia, clipped the hair from the abdomen, cleansed and sterilized the field (not with phenol), made the incision, and began exploring for Bertha's ovarian tubes.

Thorough investigation revealed that where they should be, they were not. Then to our consternation we found two well developed male testes in the proper location for such organs in this species of animal. The cat was promptly sutured and bandaged and castration performed while still under anesthesia.

If I was not an "old head" I would hesitate to confess this "boner," but it shows what mistakes can be made when one is short on time and takes anything for granted. "Bertha" was sold by the breeder as a "she" cat (males are higher priced than females), and the owner raised the animal to maturity thinking she owned a female.

The cat was taken away the following day and returned six days later for removal of stitches. The owner spoke of the cat as "she," and I referred to the individual as "he" until in desperation I forced myself to use the pronoun "it."

Suffice it to say that this Persian, whatever the sex, is still called "Bertha."

U. E. Marney, D. V. M.

San Antonio, Texas

BACILLARY WHITE DIARRHEA

I wish to comment on Dr. Baker's article on testing chickens for bacillary white diarrhea in the May issue. I know Dr. Baker, and he is thoroughly qualified to write on the subject and is doing good work in this line.

He says in his reasons for testing that reactors are not good layers, and I should like to give a few figures to prove this. We were able to separate a few flocks and keep the reactors and the healthy birds under the same feeding and housing conditions.

Flock No. 1, 247 birds with 112 reactors, kept for thirty days. The 135 healthy chickens laid an average of 62%, and the 112 reactors laid an average of 30%.

Flock No. 2, 227 birds with 72 reactors, kept for six weeks. The 155 healthy birds laid 40%, and 72 reactors laid 11%.

Flock No. 3, 125 birds with 48 reactors, kept forty days. The 77 healthy birds laid 61%, and the 48 reactors laid an average of 23%.

Geo. L. Clark

Columbia City, Ind.

GAPES IN CHICKENS

Gapes is a parasitic disease caused by Syngamus trachealis. It occurs most frequently in chicks two to eight weeks of age. The worms are reddish in color, 1/16 to 3/4 inches in length and are attached to the tracheal wall of the host. It has a forked appearance due to the attachment of the male to the anterior fourth of the female. Turkeys are supposed to be carriers of this worm and cases are reported more frequently where chicks are raised on ground inhabited by turkeys. Only one flock has been diagnosed as being affected with Syngamus trachealis by this department during the past two years.

Diagnosis: Frequent gaping, sneezing and coughing with discharge of mucus are characteristic symptoms. Birds also become droopy and stand or sit with eyes closed and gasp at frequent intervals as if suffocating. By holding the head so as to stretch the neck, and having the light shine through the tissues of the throat the darkened outlines of the worms may be seen in the trachea. Knotted horse hairs may be passed down the trachea, twisted a few times and withdrawn. A number of worms usually adhere to the hairs.

Treatment: When the disease is discovered the affected birds should be immediately isolated. The healthy birds should be removed to

temporary quarters to watch for further development of new cases. If no new cases develop the healthy chicks should be moved to ground not previously occupied by poultry for several years. All worms and infected birds should be burned as eggs and embryos remain viable in the ground for long periods of time. Infested ground should be put under cultivation.

The treatment of individual birds by introducing the looped or knotted ends of two horse hairs into the trachea and dislodging the worms is usually a difficult one but may be accomplished with some practice.—Mo. State Poultry Experiment Station.

ACUTE AND CHRONIC FOWL CHOLERA DIFFER MARKEDLY

Fowl cholera in the acute type may disappear as abruptly as it appeared but often not until large numbers of the flock have died. When one or more chickens are found dead in a period of twelve to twenty-four hours, the owner may be inclined to attribute the loss to poisoning rather than to a specific disease, thereby delaying the application of important preventive measures in the initial stages of the outbreak. Many of the sudden losses of chickens and geese have proved upon examination to be due to fowl typhoid or other forms of acute bacterial infections such as apoplectiform septicemia. Fowl cholera, however, is one of the more important diseases of poultry judged by the number of outbreaks and the loss incurred.

There is a slowly fatal type of fowl cholera which remains in a flock over a period of several weeks, accompanied by decreased egg production and slowly developing diarrhea. In this chronic type of the disease the symptoms are obscure in character and seldom recognized as fowl cholera Acute and chronic fowl cholera are differentiated by the death rate which occurs in the flock. In the chronic form of the disease fewer fowls die in a given time. In affected fowls that survive for several days, there is a loss of appetite, ruffling of the feathers, drooping of the wings and tail feathers, and diarrhea. Affected fowls sit quietly with the neck contracted and eyes partly closed. While diarrhea is a symptom of cholera many affected chickens die before the intestinal symptoms develop. In many cases of acute fowl cholera there is a noticeable gasping or choking sound at inspiration. This symptom is generally recognized as indicative of cholera and often escapes the owner's attention.

While the lesions mentioned are characteristic of fowl cholera, a diagnosis is often dependent upon finding the fowl cholera organism in the blood or internal organs.—Animal Pathology Exch., Univ. of Illinois.

PRACTICAL ITEMS

Try passing the stomach tube on horses via the nasal route, right side, using soap suds for lubricant.

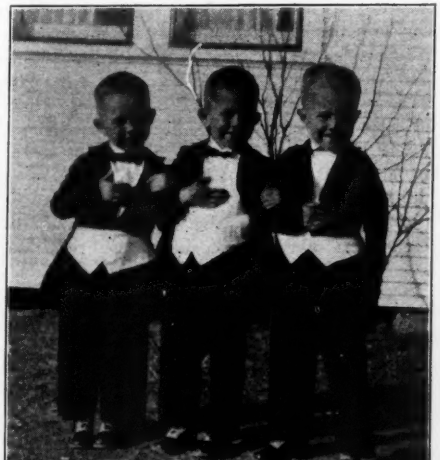
When you can't get the penis down on a horse to draw urine, try a twitch on the nose.

The plunger of a two-ounce dose syringe may be utilized as a cow or mare catheter.

As an anesthetic for dogs, a small amount of chloral per rectum, one-half to one teaspoonful, followed with a little ether, works fine.

In spaying dogs, make a one and one-half inch incision between the second row of teats. The reason for the long incision is that one can hook the horns from where they branch off, also pull the ovary back easier with no danger of rupturing the tube by pulling too hard. Sew only one stitch through the peritoneum, muscles and skin, then one on each side through the skin only.

H. G. Stephenson, D. V. M.
Independence, Kans.



Ross, Bob and Richard, sons of Dr. R. H. Hodges, Ranger, Texas.

THE RADICAL OPERATION FOR POLL EVIL

I cannot quite understand where Dr. Rembrandt Morgan finds the undesirable results from the poll evil operation he speaks of in his article in the May issue. It must be due to the climate in West Virginia, for in Indiana I believe the radical operation for poll evil is one of the most, if not the most, satisfactory operation a veterinarian can perform. And when the ninety-day period Dr. Morgan speaks of is up, one will find 99% of the cases nearly if not completely recovered.

It is true that occasionally one finds a case that will have an enlargement just back of the original wound that will break and run for a time, but this does not amount to a great deal. It is caused by self-amputation of the stump of the ligamentum nuchae.

I feel that if more veterinarians would perform this operation, using their knowledge of cleanliness and antiseptics, the farmers would not be taking their animals to empirics for treatment and then saying that Dr. So-and-So can't cure poll evil but such and such a farmer can.

Geo. L. Clark

Columbia City, Ind.

CONFLAGRATION FOLLOWING USE OF ETHEREAL SOLUTIONS

The scene of what might have proved to be a serious accident occurred in a lean-to cow barn, the center portion of the building being the hay mow with the hay coming down to the ground. On one side was the cow barn with stanchions about three feet from the hay. In this part was kept a bull with infected horn cores, which had been treated on two previous occasions, once to cleanse the parts of particles of straw, hay, etc., and the second time to rid them of maggots. The third visit was more in the nature of an examination to determine the effectiveness of the two former treatments than to continue the disinfection.

The two previous visits were in the middle of the day when the light was strong. The third visit was at the end of a cloudy day, and the light in the building was not any too good, but I succeeded in irrigating the cavities thoroughly with what seemed to be a complete annihilation of the invaders. However, to make certain that the depths of the cavities had been reached, a future visit was recommended, to which the owner consented.

On arriving at the farm, I found the owner had driven to a neighbor on a short errand, and not wishing to wait any longer, I began treatment. The animal was tied to the stanchion and the cavities irrigated with a 4 per cent solution of oxyborine, followed with the injection of a weak solution of iodin crystals in sulphuric ether. Each horn core was injected with about one-half ounce of this solution. As the maggots had established fortifications in the frontal sinus, special care was taken to see that none remained hidden in the depths of these cavities, and in examining the exudate therefrom in the dim light, there appeared to be more maggots present on the right side.

Not being able to determine the exact nature of the exudate and not having a lantern available, a match was thought safe if held at a distance. But no sooner had the match been ignited, even though some three or more feet away, than there was a flash and the bull's entire head was enveloped in a mass of flames. At the moment the flash took place, the animal became excited, stuck his head into a stanchion and almost into the hay. About this time some real fast work on my part was being done to extinguish the flames, which I succeeded in doing before any damage was done to the animal or to the building and contents. For a time it looked as though bull and building would burn up, and had I not succeeded in smothering the flames with my operating coat, serious damage might have been done.

I have always feared the combustibility of ether, but on account of the barn being an airy place, I did not consider it dangerous to strike a match some distance from the animal. It seems that the vapor generated from the ether coming in contact with the warm membranes of the frontal sinus must have been continuous for some little time after the injection, and the draft being in a favorable direction caused the vapor to ignite freely.

To witness a live creature enveloped in a mass of flames is something that I do not care to have repeated, and this incident has taught me a very valuable lesson. I generally carry a flash light in my car but did not have it on this trip. This incident has taught me that ether vapors will ignite readily when they pass from an animal toward a lighted match, even though it is held a considerable distance away from the source of the vapor. I consider this worthy of reporting for the benefit of those who use ethereal solutions of medicaments as it shows the combustibility of such solutions.

W. P. Bossenberger

Williams, Ia.

ANIMAL CASTRATION

I read with interest Dr. James Waugh's observations on animal castration in the March issue and his statement that the operation on dogs alters their normal gait, that they travel as if walking on frozen snow, or like a mule walking. Now, on this island, any one who has a nice dog which he or she wants as a pet around the house always has the dog castrated. The operation is done even by the layman. I have done a number of them, and I have never noticed any change in the gait. The voice, so far as I can observe, is not altered. They bark just as vigorously as before, and they are also very lively.

I have performed the operation on dogs at all ages, from mere puppies three months old, to dogs five and six years old. Some may wonder why one should wait until the dog is so old. The owner in many cases says or thinks he won't bother to have the dog castrated or is afraid to let a layman do it. I may happen to be around doing other work, when the owner will say, "Doc, I can't keep that dog of mine at home—he is always away from the house—sometimes I don't see him for days, and when he comes in, he is bitten on the neck, legs, etc." So I castrate the dog.

The operation is very simple. I incise the scrotum and peritoneum with the castrating knife and divide the cord with the operating scissors, giving the cord a half turn before severing. Cats are done the same way.

I have never performed the operation on females for the reason that dogs are not valuable here, and the owners, although they know the operation requires skill and care, will not pay for it. When one practices in a community where everybody is related to everybody else, and the surgeon does for one gratis and not for the other, well, you will find a lot of discord. Therefore, I don't do it at all. I suppose readers will understand what I mean. I got a dollar once for castrating a dog, and that was because the party was not related to those for whom I work, so I charged. Otherwise, the job is done for "thanks."

My object in making these remarks is that a young graduate just from college might be asked by a client to castrate a dog, and on seeing an article like the one by Dr. Waugh, might advise the client that the operation will alter the dog's gait, and so refuse to do it and lose a fee.

I have also castrated bulls at all ages but have never observed any effect that it has on the growth of horns. I have no experience as to the effect it has on the teeth of pigs, although I have castrated boars at all ages. I castrate them and never see them again. Sometimes I have operated on boars that had been in service for years. Then the owner gets a new boar and he wants the old fellow castrated as he intends to butcher him, but would like him castrated to have that male odor removed. These animals I never see afterwards as they are sold, i. e. the meat, to the darkies on the plantations.

Ernest F. Jardine, V. S.
Govt. Veterinary Surgeon
Basseterre, St. Kitts, B. W. I.

A PRACTITIONER'S OUTLOOK

After reading Dr. Mann's article in the May issue of Veterinary Medicine on "The Social Standing of the Veterinarian," and also Dr. Henry Hell's "The Prospective Veterinary Student" in the March issue, I wish to say that I think they are unnecessarily pessimistic.

As far as the social standing of the veterinarian goes in this country, it is not very rosy, but here in the Pacific Northwest, "a man is a man," and I have found everywhere I have gone that a man's social standing in a community depends entirely on his character and ability. Personally, I do not desire to mix in so-called "high brow" society, for I am distinctly a home man and take delight in spending my evenings in constructive reading by the fireside.

As far as our financial reward goes, we are vastly underpaid compared with other branches of the medical profession. However, I do not think the general country physician is making more than a living, and it is only the specialists in the big cities who get the big money. Recently I read in a medical journal that the average yearly income of the physician in the United States is less than $1,000. I had a hard time to believe it, but any one who doubts this statement may read it in the February issue of Clinical Medicine, page 110. However, if we compare our lot with that of the minister, school teacher and engineer, for our time spent in training is about the same length, we have not much to complain of.

Being an immigrant, perhaps my demands for worldly goods are not as high as that of the Americans. I was raised on a farm in the old country, and I learned to do without many things that are considered essential in life. My first job in this country was in a saw-mill at

$2.50 for a ten-hour day. There are many days now when I do not make more, but there have been days, very few indeed, when I have made as much as $80.00, and taking the year round, I make several times what I did in the sawmill. There I also stood the risk of being laid off during winters and eating up my savings.

Living in a small farmer town, I find property cheap. I have acquired half a block for a small amount. On this I have erected and paid for during my six years in practice a small residence and office combined (not elaborate, but my wife keeps it bright and shiny inside), operating building and barn, a garage for my not very new Ford (I have no chauffeur), and a chicken house large enough for 400 hens. My practice during the greater part of the year takes only a small part of my time, so I have much time to devote to caring for and breeding chickens, gardening and keeping my place spick and span. When night comes, I am tired and can sleep like a log. I also have much time left for reading, which I enjoy.

When I left college, six years ago, my health was broken. It was my intention to continue my studies in a medical college, but I had to quit. Had I been compelled to work indoors in an office those six years, I would not be alive today to enjoy life. Now, I feel 100 per cent physically fit. I am happy and contented. My wife is also happy. She devotes much of her time to raising beautiful flowers.

Ever since I started practicing, the farmers have been suffering because of poor crops and low prices for farm products. It affects my income, but yet I have prospered in a small way. It is not what one makes, but what one saves that counts at the end of the year. When I compare my lot with that of the poor farmer mortgaged up to his ears, I feel well satisfied with my economic condition.

The man who has a large practice and a large income lives a strenuous life, which he cannot hope to continue for many years without a nervous breakdown. So the price of his large income is often paid for with his health and his life. Rather would I be a poor veterinarian, quite commonly called "horse doctor," than a dead millionaire. Barring accidents and unlooked for illness, I expect to continue in practice until a ripe old age. So while I do not expect nor desire to acquire a fortune, I can look toward the future with confidence.

However, the point is—if I had a son would I advise him to take up the study of veterinary medicine? It would depend entirely on his leanings, ambition, energy and business ability. I certainly would do nothing to discourage him, if after watching the uphill pull of the veterinary practitioner, he still had the courage to make this his life work.

O. W. Johnson, D. V. M.
Davenport Wash.

THE SOCIAL STANDING OF THE VETERINARIAN

I have just read the article in the May issue by Dr. Mann of Philadelphia, and as I read it I could not help but think of two different occasions on which I had an opportunity to speak for the veterinary profession, and I made the most of both of them.

One was when I was a senior at veterinary college. I received the honor of being chosen as salutatorian of my class, and in order to do justice to my subject and make a fairly graceful appearance so that my classmates who chose me to represent them would have to make no excuses for me to their friends and relatives whom they invited to our commencement exercises, I began to "plug up" a bit. I attended a few night sessions at a school of expression where I could get up before the rest of the students and say a few words in order to overcome the splanchnic engorgement which so many of us suffer when asked to speak before a crowd.

In this course, we were compelled to give extemporaneous as well as prepared talks for from three to fifteen minutes. In some of these talks the subjects were assigned to us, while in others we were allowed to choose our subjects. When it came my time to choose my subject, I talked on the veterinary profession. I told the class all about the profession, past, present and made some predictions for the future. After I had finished telling what the veterinarians were doing toward protecting the nation's livestock from devastation by disease, what they were doing for the nation's health in the line of food inspection, and the control of diseases transmissible from brute to human, many of my fellow students, as well as the instructors, expressed their enlightenment. There were men and women in this class from many walks of life such as doctors, lawyers, professors, university students and teachers.

The second occasion was when I was in the army of our Uncle Sam. At the medical officers' training group in Camp Greenleaf, Georgia, the physicians, dentists, sanitarians and veterinarians were all thrown together for some of their work. When some of the former three professions heard of the latter one, they began to sniff for the odor of creolin, look for boots

covered with horse manure and vest pockets filled with fleams and thermometers, but when they were unable to find any of these landmarks of the old "hoss doctor," they were at a great loss for marks of distinction. To their great surprise when they were able to locate a veterinarian, they found a man well versed in many of the subjects that they thought they themselves only knew. I came in personal contact with many of these fellows and made an effort to enlighten them on the subject of veterinary medicine and the good it was doing for humanity.

On another occasion, while I was an embryo veterinarian, during vacation from college, I located in a small town to practice for the purpose of gaining experience first hand, as well as earning some of my expense money. My nearest competitors were a couple of non-graduates, a father and his son. The son was nearly my own age and used to visit with me when the opportunity offered.

Once I asked him, "Charley, why don't you go to veterinary college and prepare yourself so as to become recognized by the state and federal government as a real veterinarian?"

He said, "Well, George, I can't see any future in the profession. I think these darned automobiles and tractors are going to put us fellows out of business. If I take up anything, it will be dentistry."

I replied, "Charley, do you think for one minute that a machine will be invented that will produce milk, pork chops and fresh eggs for our breakfast? It is the food producing animals that we are to protect."

Charley shook his head and said, "Well, sir, I had never looked at it in that way." Of course he hadn't. He was a "hoss doctor" from the word go and is the same today.

In Dr. Mann's article he gives the argument of a young lady who was far less informed even than my friend Charley. Oh, what an opportunity this would have been to enlighten her and make another real friend for our profession! It would have been so much more impressive coming as it were from one whom she did not know belonged to our profession. The young lady would have seen her own ignorance and would have been glad to associate with a man who is in a position to help feed the hungry world on good clean, healthy meat, milk and eggs, and in other ways protect humanity against the ravages of diseases that might come from our dumb friends.

I realize Dr. Mann's position in a large city where his only patients are the horse, the dog and cat. Nevertheless, a man is a man, and he should be content. If his friends don't know who, what and why a veterinarian is, he should teach them, and if they still refuse to see the light and he desires to associate with doctors, dentists, lawyers and ministers, he should come out Where The West Begins. All you have to be out here is a man among men, and your way is paved to the best of society We have no sharp lines of demarcation.

G. G. Faber, D. V. M.

Mitchell, S. D.

OFFICE PRACTICE

One rainy, gloomy night in the winter as I was sitting in my office, I heard the door open softly, and looking around I saw standing hesitatingly in the doorway a little, weazen-faced, watery-eyed, long-nosed, lazy, lolling sort of a biped who lived near the post-office of "Jay Bird Gravy" down in the "Sun Fish" hills. I had often seen him loafing around groceries and doggeries on Saturdays.

"Be you the farrier?" he asked in a whining tone.

"Yes, yes, come in and warm." He came in slowly, softly, latched the door and took a chair near the stove.

"Well, Doc, I don't know if it is worth while, but I thought I would just drap in a minute, seein' you wasn't busy, and ask you a question or two. I don't want to bother you any, but I thought I would see if you can tell what was the matter with a hoss of mine. I'll tell you how he acted, and then you will know, I expect."

I had practiced a good deal in his neighborhood and for his relatives and thought I had best listen to the recital of symptoms. So I settled down deep in my chair, partly closed my eyes, fortified myself for the onslaught, and told him to fire ahead.

He whined away through his nose, relating the train of symptoms his horse had exhibited and according to what he said, the horse must have suffered from every disease between Asiatic cholera and an ingrowing nail. I stopped him occasionally and asked him a question or two in order for him to catch his wind. Having plenty of time to waste, I wanted to see how long the seance might last.

He was as tedious as a doctrinal sermon or a tired horse and more irritating than a smoking chimney. He had talked for about an hour, and flesh and blood could stand it no longer. I then told him I could not prescribe for his horse until I knew exactly what was the matter

with it and that I had better see the animal.

"You can't see him, Doc, for he is dead."

"Well, do you want a postmortem held? How long has he been dead?"

"Let me see," counting to himself half aloud, "teen-teen-eighteen—about nineteen or twenty years."

Great Melchisedec! I could hardly refrain from getting obstreperous, and my terrific effort at self-control resulted in my hair becoming a delicate red, which color it has remained ever since. I staggered to the window and glared at the man in suppressed emotion.

"Doc, what do you think was the matter with him?"

I told him I did not know. His face grew solemn and a disappointed look came into his "red flannel" eyes. He gazed into the fire a few moments, then slowly rose and stole out into the darkness and rain. I was alone again, and naught could be heard save the scrambling around of the blistering ointment trying to get out of its tin bucket.

S. R. Howard, V. S.

Hillsboro, Ohio

THE SOCIAL STANDING OF THE VETERINARIAN

I cannot read Dr. Mann's article concerning the social standing of the veterinarian without replying and giving the viewpoint of a veterinary student.

Dr. Mann, alias Mr. Mann, writes an article full of pessimistic arguments without admitting an optimistic side to the question. Incidents that he mentions do not enable the student to look at the question with an unbiased opinion; it either repels him from the subject or from the author. I suggest that Dr. Mann prepare a pamphlet giving both sides of the question without an opinionated viewpoint. Then perhaps he would be justified to present it for all who cared to read. His recent article seems to be nothing but a "black eye" for the profession, and perhaps it put the germ of dissatisfaction in some contented practitioners and students.

Did Dr. Mann think, back in 1917, when he received his D. V. M. or the equivalent, that the doors of wealth and popularity were going to open wide and acclaim him the hero of the day? If he will only stop to think for a moment about fiscal affairs, he must surely realize that we all cannot be fifty-thousand-dollar-a-year lawyers. On the side, I hope he realizes that the prerequisite of many "flappers" is a small fortune and a foreign title, so why should he expect them to fall for his "line?"

I ask Dr. Mann, in fairness to the profession and to the present college students studying veterinary medicine, that he try to see a good point about this profession of ours and to register a more pleasant expression concerning such things. If he should sojourn at a pretentious summer resort hotel this year, unless he can play the veterinarian through and through and uphold his profession in a dignified manner, I suggest that he again register as "Mr. Mann."

A Veterinary Student

New York, N. Y.

WHERE ARE THE OTHER TWENTY-SEVEN?

In looking over the list of the active members of the A. V. M. A., I find only three names besides my own, making four in all, out of the thirty-one who graduated with me. What has become of the other twenty-seven? It seems to me that this is a rather large percentage to drop out in eight years. Can it be that you have drifted into other business, or have you found it hard to raise the necessary five-spot once each year? While it comes hard sometimes and there are so many needs for it, still I believe we ought to try to get hold of it some way, for when I see a fellow's name on the list it makes me feel good, and I say to myself, "Well, he is still sticking."

Any of you fellows who read this are invited to write me a friendly letter, for you remember we all shook hands and promised to write to each other. I have done my part to keep in touch with the bunch but have received very few replies for my trouble.

While it is not impossible for a fellow who does not belong to the A. V. M. A. or who does not read the journals to make good, I do not regard it as very probable that he will. Your knowledge will never profit you any if it is not applied.

One day I met a very crusty old farmer on the train who asked me about the treatment for a spavined horse. I gave him a blister with instructions for applying it. Some two weeks later I chanced to meet him again and inquired if the blister had done any good. With an oath, he said he guessed it had not. I then asked him what he did with it, and he said he stuck it in a crack of the corn crib and it was still sticking there. The blister was just like our knowledge—we cannot expect results if it is not applied.

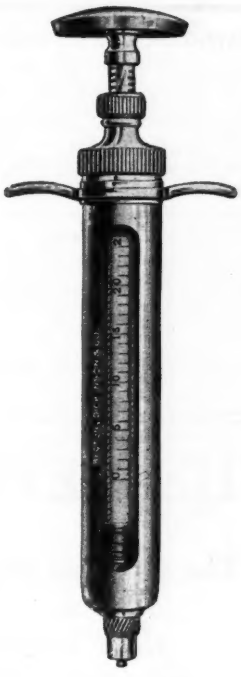
Rembrandt Morgan

Winfield, W. Va.

B-D PRODUCTS

Made for the Profession

Champion-Lok Veterinary Syringe



Accurate graduations

Visible fluid column

Expansion plunger—No back-flow

Adjustable set screw for correct dosage

Finger rest for one hand manipulation

"Lok" prevents Needle "jumping off"

Genuine When Marked **B-D**

Supplied through Dealers

BECTON, DICKINSON & CO.

RUTHERFORD, N. J.

Makers of B-D Veterinary Thermometers, Champion Syringes and Needles, Monarch Milking Tubes and B-D Cattle Specialties

"Making Animal Tagging Easy"

KETCHUM CLINCHER

The new self-piercing and self-clinching bright STEEL tag for Cattle, Sheep and Hogs—that stays in. Three sizes. Numbered and Lettered to suit. Write for descriptions and prices.

KETCHUM MFG. CO., Dept. A, Luzerne, N. Y.

NEW YORK CITY MEETING

The regular monthly meeting of the New York City Veterinary Medical Association was held at the Academy of Medicine, 43rd St., New York City, on Wednesday evening, April 1st. The literary program announced that Dr. J. F. DeVine would address the association on breeding problems of the larger animals. This was to be followed by case reports.

About one hour was given to the discussion of breeding problems, after which several veterinarians reported cases that were regarded as unusual.

Dr. George Little reported a case of a Collie that had suffered a skin irritation for a long time and constant falling of hair. After a cecectomy operation the condition cleared up and the coat became lustrous and beautiful. The cecum was found to be badly infected with hookworm.

Dr. H. K. Miller reported a fistula of long standing of the lumbar region of a dog. No X-ray examination was made, but the Doctor thought it probably a fistula of the psoas muscle. He will report further on the case.

Such case reports always stimulate interest and are of great help to the younger men in bringing to their attention the varieties of accident and disease. Following these case reports there was a gradual drifting to a general round-table discussion, which this association is noted for; in fact, most all its meetings break up with a pleasant visiting which is one of the things that has helped hold the organization together so many years.

J. F. DeVine

Dr. Fred Madson, formerly at Rushford, Minn., has located at Alma Center, Wis., where he has bought a drug store, which he conducts in addition to taking care of general practice.

THE VETERINARY RECORD

The Official Organ of British Veterinary Opinion

Keep abreast of current scientific and clinical veterinary activity in the British Isles by Subscribing to THE PAPER OWNED BY THE BRITISH VETERINARY PROFESSION.

It is

THE WEEKLY YOU WANT

Published by the National Veterinary Medical Association of Great Britain and Ireland, 10, Gray's Inn Square, London, W. C. 1.

Subscription $12.60 post free weekly.

The finest medium for advertisement.

Three Reasons

why veterinarians use *Fleischmann's Pure Dry Yeast* to help carry young stock through weaning time

EVERY veterinarian knows these facts:

—that setbacks to foals frequently occur at weaning time. Changes to cow's milk—necessary when dam or foal are not doing well—or to grain, often cause scours. And since a foal makes nearly half its growth during the first year, it will never fully recover if stunted.

—that the most common trouble in raising calves by hand is scours. A severe case will give a calf a setback from which it recovers but slowly. And, altho very easy to raise, dairy heifers are often stunted for lack of suitable food just when they need it most for proper development.

—that after weaning, pigs need a larger proportion of rich protein foods than before. They must be kept gaining steadily to show a good profit.

It is because they know these things that leading veterinarians and thousands of farmers and breeders are using Fleischmann's Pure Dry Yeast in feeding and handling young stock.

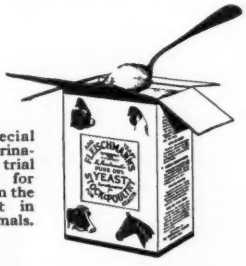
Added in small amounts to the regular "after-weaning feed," Yeast will ferment in a wet ration. Fed dry, it acts on the feed as soon as it is eaten.

This action of Yeast breaks down the proteins and prepares more of them for easy, rapid absorption, so that less of the food passes out of the system before it is digested and less of it remains undigested to clog the system. This results not only in *better assimilation and nutrition*, and in *freedom from digestive disorders*, but in a noticeably *improved condition* of all animals fed Yeast.

Summing it up, scours and stunting are prevented—young animals are more vigorous—as a result of feeding Fleischmann's Pure Dry Yeast according to directions. The cost is very small—one pound is enough for 5 pigs for 20 days or for one colt or calf for a month and a half!

* * *

Mail the coupon to any of our branch offices and we will send you booklets on the use of Yeast in breeding, feeding, and handling animals, together with special prices to veterinarians and dealers. The Fleischmann Company, 69 Bank Street, New York, N. Y.



Write for special prices to veterinarians on this trial package—and for free booklets on the use of Yeast in handling animals.

FLEISCHMANN'S
PURE DRY YEAST

THE FLEISCHMANN COMPANY, Dept. D-162
New York, Brooklyn, Chicago, San Francisco, Seattle, Hartford, Conn., Portland, Me., Buffalo, Albany, Philadelphia, Pittsburgh, Baltimore, Boston, Birmingham, Cincinnati, Cleveland, Columbus, O., Dallas, St. Louis, Detroit, St. Paul, Denver, Newark, N. J., Toronto, Montreal, Winnipeg, Havana, or San Juan.

Please send me free booklets on the use of Yeast in the handling of all animals, together with your special prices to veterinarians and dealers.

Name.....

Street .....

City.....State.....

Copyright, 1925, The Fleischmann Co.

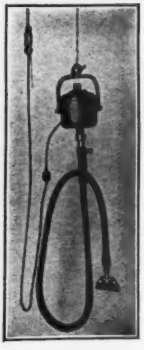
VETERINARIANS

Clipping Dogs make anywhere from $3.00 to $5.00 for each animal clipped.

GILLETTE

Portable Electric Clipping, Grooming and Sheep Shearing Machines.

Hanging and Pedestal Type



Model "1911" Hanging Type Portable Electric Machine

Operated on the light circuit furnished by any Electric Light & Power Co., or on any make of Farm Lighting Plant.

Send for our illustrated Price List describing our different types of machines. Our NEW STYLE SPECIAL DOG CLIPPING MACHINE with TWO SETS OF "GILLETTE" SPECIAL DOG CUTTERS (see illustration below) will pay for itself in a very short time and after paying the incidental expenses the profits will be from 90 to 95 per cent.

Gillette Clipping Machine Co.
New York, N. Y.

Gentlemen:

I received the Model "1911" Electric Dog Clipper and have it installed. It works like a charm.

Yours truly,
J. Elliott Crawford
D. V. S.

Gentlemen:

On June 28, 1923, we ordered by telegram one Model "1911" Electric Clipping Machine. This Clipper is now giving entire satisfaction and we have failed to find any hair that will stop it.

Yours truly,
Hospital for Animals,
W. E. Seymour,
D. V. M.

Gillette Special Dog Cutter.

Gillette Clipping Machine Co.

129-131 WEST 31ST STREET, DEPT. V.

NEW YORK, N. Y.

ALUMNI DINNER OF THE VETERINARY DEPARTMENT, NEW YORK UNIVERSITY

This pleasant affair, which has continued unbroken for over a half century, was celebrated this year on April 14th at the Fraternity Club, East 38th St., New York City. Secretary Louis J. Camuti with his several aides, had outlined a good program and many responded to visit, dine and listen to reminiscences, philosophy and advice from the speakers.

President Walter G. Hollingworth presided. Dr. R. MacKellar acted as Toastmaster. Those who responded to toasts were Lt. Col. Fred M. Crossett, Gen. Alumni Sec'y, Dr. W. Reid Blair, Dr. Wm. Herbert Lowe. The latter was followed by that lovable character who has spread radiance, good cheer and hope in this alumni association since the days of Liautard, Robinson and Coates:—Dr. John P. Munn, Member of the University Council.

The closing address was by that loyal little woman who has done so much for the veterinary profession, Mrs. Horace H. Hoskins.

Upon Dr. Albert N. Towner was conferred the honor of serving as President for the coming year.

J. F. DeVine

FLORIDA ENACTS VETERINARY PRACTICE LAW

Dr. Zac T. Nalls of Jasper, Fla., reports that the Florida legislature passed a veterinary practice act on May 6th. He states it is a good one and in line with the great advancement being made in that great state of Dixie. It provides for the prompt appointment of a board of veterinary medical examiners by the governor. The Florida State Veterinary Medical Association sponsored the bill in a very creditable manner which resulted in its becoming a law.

Drs. J. G. Horning and A. J. McKee of Houston, Texas, are preparing an article on their work in tonsilectomy in dogs, which will appear in an early issue of Veterinary Medicine. They have completed a report with illustrations on splenectomy, which will be published soon. They have also obtained from Dr. Chevalier Jackson some splendid photographs of endoscopic work in dogs, reproductions of which will appear in a later issue. Dr. Jackson has an international reputation for developing this work in humans.

THE VETERINARY JOURNAL

Do You Read It?

THE VETERINARY JOURNAL is the only monthly paper devoted to the study and practice of Veterinary Medicine published in the British Isles, and for the past forty-seven years it has maintained with success its position as one of the leading clinical journals of the Veterinary Profession throughout the world.

It contains the record of the scientific progress of the Veterinary Profession throughout the British Isles, India, Africa, Australia, New Zealand, and Canada. Its contributors write from all parts of the world, and the editor is Mr. Frederick Hobday, C. M. G., F. R. C. V. S., F. R. S. E., who is Hon. Veterinary Surgeon to His Majesty the King, whilst the Sub-Editor is Mr. Gladstone Mayall, M. R. C. V. S. *It especially caters for the practitioner,* and has always endeavored to make a special study of daily clinical work.

If you wish to keep up to date you cannot afford to leave such a valuable source of information untouched. Even if you only pick up from its columns one new hint, or one new and successful treatment during the year, you will be amply repaid for the expenditure of the small subscription involved.

ALEX EGER
9 South Clinton Street
Chicago, Ill., U. S. A.

← Will Arrange →
Your Subscription
($5.00 post free)

G. E. STECHERT & CO.
151-155 West 25th Street
New York, U. S. A.

Write for specimen copy to

BAILLIERE, TINDALL & COX

Medical and Veterinary Publishers
8 HENRIETTA STREET, COVENT GARDEN, LONDON, ENGLAND

Veterinarian's Special

OTOSCOPE

For the Examination of

Dogs, Cats, Foxes, Etc.

The Otoscope with two assorted specula is necessary in diagnosis of the conditions in mouth and throat. A special speculum has been designed by Dr. Milks, Cornell Univ., which is included allowing a perfect vision of the ear drum and for examining all ear conditions.

By turning lens partly to one side on Otoscope, operator can work under a magnified view if desired and closing lens gives an airtight instrument for massaging drum.

Complete in leather covered case with extra lamp and rubber inflating bulb.

Price, $23.25

Prices quoted f. o. b. Chicago

SHARP & SMITH
65 E. LAKE STREET CHICAGO, ILLINOIS

CHANGES RELATIVE TO VETERINARY OFFICERS, REGULAR ARMY

1st Lieutenant Herbert K. Moore, V. C., on duty at Fort Sheridan, Illinois, promoted to grade of Captain on April 2, 1925.

Captain Wm. H. Houston, V. C., is relieved from duty as assistant to Attending Veterinarian, Washington, D. C., on or about May 10, 1925, and directed to report to the Commanding Officer, Reno Q. M. I. D., Fort Reno, Oklahoma, for duty.

Captain Horace S. Eakins, V. C., is relieved from duty at Fort Myer, Virginia, effective in time to sail from New York City August 6, 1925, for Panama Canal for duty in that Department.

1st Lieutenant Raymond T. Seymour, V. C., is assigned to duty at Fort Hoyle, Maryland, on completion of his present tour of foreign service about August 31, 1925.

Captain Burlin C. Bridges, V. C., is relieved from duty at the Purchasing & Breeding Headquarters, Fort Reno, Oklohamo, and will report for duty at Fort Bliss, on or about May 10, 1925.

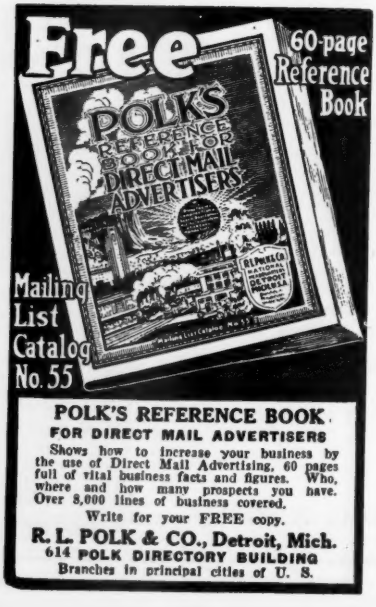
VETERINARY RESERVE OFFICERS

Additional Reserve Officers:

Majors:

Barber, Oliver Anson, Route No. 1, Jacksonville, Ark.

Pilgrim, Stanley Lefeber, 190 Cedar Street, Wauwatosa, Wisconsin.


Free
60-page Reference Book
POLK'S REFERENCE BOOK FOR DIRECT MAIL ADVERTISERS
Mailing List Catalog No. 55
POLK'S REFERENCE BOOK
FOR DIRECT MAIL ADVERTISERS
Shows how to increase your business by the use of Direct Mail Advertising, 60 pages full of vital business facts and figures. Who, where and how many prospects you have. Over 8,000 lines of business covered.
Write for your FREE copy.
R. L. POLK & CO., Detroit, Mich.
614 POLK DIRECTORY BUILDING
Branches in principal cities of U. S.

Captains:

Kearns, Floyd Morton, 1880 Frankfort Ave., Louisville, Kentucky.

McCormack, Walter Douglas, Conway, South Carolina.

1st Lieuts.:

Port, Walter Green, Paullina, Iowa.

2nd Lieuts.:

Echavarria, Marciano, San Fernando, Pampanga, P. I.

Graves, Hobson Wm., Box 66, Union, South Carolina.

Mooberry, Clive Watson, 144 Oneida St., Milwaukee, Wis.

Pleuger, Carl August, Cor. Dayton and Freeman Sts., Cincinnati, Ohio.

Shahan, Maurice Sommer, 447 North 2nd Street, Grand Junction, Colorado.

Snyder, Jesse Beers, 4130 Flora Avenue, Kansas City, Mo.

Stephenson, Henry George, P. O. Box 348, Independence, Kansas.

Swanson, Raymond Victor, R. F. D. No. 1, Pocatello, Idaho.

Wilkins, Harold Leslie, 114 West Cypress St., Anaheim, Cal.

Promotions:

Ash, James Joseph, 5640 Justine Street, Chicago, Illinois, promoted to grade of Major, Vet-Res.

Marsh, Hadleigh, Live Stock San. Board, Helena, Mont., promoted to grade of Major, Vet-Res.

ARMY VETERINARY LICENSED FEDERAL HAY INSPECTORS

Arrangements have been completed whereby the U. S. Department of Agriculture issues a Federal Hay Inspector's license to veterinary officers who complete the prescribed course in hay inspection being given at the Bureau of Agricultural Economics in connection with the Army Veterinary School. Fifteen officers from the last two classes of the School assigned to stations where they will be required to inspect hay offered for sale to the Army have completed the course and received their licenses.

This issuance of licenses to veterinary officers is of great importance to the Army Veterinary Service since it officially recognizes these officers as competent scientific hay inspectors.

By specifying U. S. standard grades in forage contracts and a proper interpretation of the specifications upon delivery of the product, the Army is assured of receiving the class and grade of forage for which payment is made.

Why Take A Chance

with poisonous germicides like mercury bichloride or phenol?

CHLORAZENE

Dakin's non-poisonous, non-irritating antiseptic, is a safe, stable and accurate, definite chemical compound from which solutions are quickly made by simply dissolving the tablets or powder in water.

CHLORAZENE is one of the most powerful germicides known
CHLORAZENE does not irritate
CHLORAZENE is stable and convenient
CHLORAZENE is economical

For treating wounds, fistulas, harness and saddle-galls and as a genito-urinary antiseptic, **Chlorazene** is unexcelled.

Chlorazene is supplied in bottles of 100 and 1000 tablets and in hospital packages of enough powder to make 1 and 5 gallons of solution.

Sample of tablets on request.

The Abbott Laboratories

4753 Ravenswood Ave., Chicago, Illinois

New York Seattle San Francisco Los Angeles Toronto Bombay

VETERINARY CORPS

In anticipation of attending the approaching summer training camp instruction, which will be held at Ft. Snelling, Minn., and at Carlisle Barracks, Pa., a number of veterinary reserve officers have already filed their applications at the Veterinary Service headquarters, office of the Surgeon General of the Army, Washington, D. C. According to the proposed schedule of branch instruction of the veterinary reserve officers attending these camps, which is based upon the assumption that there will be available a daily two-hour period for 12 days, or a total of 24 hours for this purpose, the object of this training is to acquaint the student officers with the organization and functions of the Veterinary Service and the methods employed in the fulfillment of its mission.

The 12 subjects included in the proposed schedule of instruction are as follows: General provisions of the Veterinary Service; Veterinary station service; remount purchasing and breeding headquarters, purchasing boards, ports of embarkation and debarkation, transports; Veterinary hospitals and hospital rules; physical examination of animals and practical demonstration; Veterinary sanitation; Veterinary forage inspection; communicable diseases of animals;

UCCos Cresolis

A Superior Cresol Compound approved by B. A. I. order No. 273, as follows:

Containers inclusive

50-gal. drums .....$1.30 per gal.
30-gal. drums ..... 1.35 per gal.
10-gal. cans ..... 1.60 per gal.

Ask us to quote on the following:

Liquor Cresolis Compositus, U. S. P.
Circle A Dip
Puro Pine Disinfectant
Iodine, 3½% "Approved"
Iodine, Tincture, U. S. P.
Oil of Chenopodium
Antiseptic Olive Liquid Soap
Swine Vermifuge
Liquid Fly Relief

Order now—it is a good investment

United Chemical Companies

KANSAS CITY, MISSOURI

Veterinary Service in theater of operations; meat and dairy hygiene; reports and returns; second phase of Veterinary Service in theater of operations, which will include a practical demonstration, if possible, assigning students to front-line organizations, Veterinary company, and evacuation hospitals.—Army and Navy Journal.

Dr. G. W. Hamilton has moved from Ft. Wayne to Southport, Ind.

Dr. John L. Tyler has disposed of his practice at Huntington Park, Cal., to Dr. M. DeBooy, formerly of Iowa. Dr. Tyler states that while he has not retired from practice permanently, yet he expects to take a good long vacation and is residing at Whittier, Cal., for the summer.

Dr. S. Youngberg is serving as Acting Director of Agriculture at Manila, Philippine Islands, which position he has held since January 1st. The former director of the bureau, General Adriano Hernandez, died on February 16th, after an illness of about two months. He had been associated with the bureau for more than ten years. The appointment of a permanent director may be made this summer, and it is reported that there are several candidates for the position.

Veterinarians of Iroquois county, Illinois, met at the office of Dr. Hugh Herron of Watseka, Ill., April 28th, and organized a county association. The following officers were elected: Dr. H. L. Brown of Onarga, president; Dr. R. M. Hampton of Watseka, vice president; Dr. O. F. West of Sheldon, secretary-treasurer. Dr. J. S. Koen of Bloomington was present and assisted in the formation of the new organization, which is known as the Eastern Illinois Veterinary Medical Association. There are ten graduate veterinarians in Iroquois county, nine of whom were present at the meeting. It is planned to hold regular meetings quarterly, with special meetings whenever the occasion arises.

The Wabash Valley Veterinary Association held a meeting at Marion, Ind., April 30th. Dr. J. A. Julian, State Veterinarian, spoke on the work of stamping out the recent outbreak of European fowl plague in seven counties of the state. Dr. G. L. Simons discussed tuberculosis eradication in cattle. Following the meeting, the veterinarians and their wives who accompanied them were entertained at a six o'clock dinner given by Dr. and Mrs. Wallace. Dr. H. A. Sailors of Wabash, Ind., is president of the association, and Dr. D. D. Baker, also of Wabash, is secretary.

Veterinarians of Marion county, Oregon, recently met with the county court in a general discussion of the new herd law which became effective May 28th. Four candidates are in the field for appointment as herd inspectors: Dr. W. G. Morehouse of Salem, Dr. G. F. Korinek of Stayton, Dr. A. W. Simmons of Silverton, and Dr. Thomas Simms of Woodburn. The county is to be divided into four districts, each inspector having charge of the district in which he resides.

Dr. W. A. Robertson has moved from Cheyenne to Rawlins, Wyoming.

Dr. T. A. Sigler of Greencastle, Ind., spoke on shipping diseases of cattle at the annual cattle feeders convention held at Purdue University, LaFayette, Ind., May 1st.

Dr. W. B. Lincoln, State Veterinarian of Tennessee, spoke on poultry inspection before the annual conference of food and drug inspection officers at Nashville, Tenn., April 22nd.

Dr. W. R. DeWitt of Cisco, Texas, died suddenly April 20th, the cause of death being angina pectoris. He was 66 years of age and born in Tennessee. He had practiced at Cisco about eighteen years. He is survived by a widow and five children.

Dr. A. J. O'Grady, veterinarian for the city health department, San Antonio, Texas, has gone to Chicago, and Dr. R. L. Rhea was appointed to succeed him, May 1st.

Dr. Horace Rice recently completed construction of a $13,000 veterinary hospital at Little Rock, Ark.

Dr. Leonard I. Beller began work on the erection of his new small animal hospital at Huntington Park, Cal., the latter part of April.

Dr. H. A. Tripeer, Walla Walla, Wash., Dr. George W. Staggs, Chehalis, and Dr. P. G. Mackintosh of Yakima, have been appointed on the Washington state veterinary examining board.

Veterinary Zonite

The Modern Veterinary Antiseptic Indicated in the following conditions:

Post-operative wounds: In all post-operative wounds, Veterinary Zonite is of great value. *Neurectomy* operations should be dressed with Veterinary Zonite packs. Thoroughly clean and shave site of operation. Wash in 1:16 solution Veterinary Zonite. Operate carefully and quickly. Use absorbent cotton sponges wrung out in Veterinary Zonite solution (1:16) to absorb blood. After operation sponge carefully with same solution, apply small cotton pack wet with Veterinary Zonite (1:16) and cover with gauze bandage. Apply large wet cotton pack same as above with gauze bandage. Apply muslin or Derby bandage over all to exclude dirt, etc. Allow dressing to remain in place for week to ten days. Re-dress if necessary. Healing usually effected by first intention.

Abscesses should be thoroughly washed and shaved, then cleansed with Veterinary Zonite solution (1:16). Make bold incision and thoroughly irrigate daily with Veterinary Zonite solution (1:16). In larger abscess cavities pack with cotton or gauze thoroughly saturated with Veterinary Zonite (1:16).

Open tendon sheath: Apply large cotton packs thoroughly saturated with Veterinary Zonite (1:16 or 1:32) under muslin or gauze bandages. Extra packs should be applied over prominent parts (hock, knee, etc.) to avoid pressure necrosis. Saturate the dressing every two or three hours with Veterinary Zonite (1:16 or 1:32). Almost marvelous results have been obtained.

Castrations: Thoroughly wash and cleanse Scrotum with hot water and Castile or Ivory soap. Wash and disinfect with Veterinary Zonite solution (1:16). Thoroughly cleanse and spray daily with Veterinary Zonite (1:16). Controls infection. Promotes healing.

Quittor and Resection: Thoroughly clean site of operation, remove all dirty horn and clip to knee or hock. Perform operation according to approved practice. Thoroughly cleanse with Veterinary Zonite (1:16). Apply large wet cotton packs Veterinary Zonite (1:16) and muslin bandages. Another large wet pack over all to knee, muslin bandage, burlap and tar bandage. Watch temperature daily and if conditions are favorable (temperature, appetite, etc.), do not dress for 18 or 21 days.

Sold exclusively to the veterinary profession in one-gallon rubber-stoppered glass containers. Net price, $4.00—*delivered to you.* This rate can apply only upon receipt of cash or money order in advance. (Slightly higher in Canada.)

All orders or communications should be addressed to

THE CASSIUS WAY COMPANY

Veterinary Zonite Division

100 East 45th Street New York, N.Y.

Diagnosis and Treatment of Internal Parasites

By MAURICE C. HALL
Senior Zoologist, B. A. I.

A concise, practical work on parasitology of domestic animals. Among the subjects discussed are:

Collecting and Examining Parasites
Handling Specimens Collected
Examination of stomach Contents
Examination of the Lungs
Excretory System, Circulatory System, Muscular System, Skeleton and Nervous System
Examination of Specimens
Examining Feces for Parasites and Parasitic Eggs
Eggs and Larvae of Dog, Cat and Fox Parasites
Eggs and Larvae of Swine Parasites
Eggs and Larvae of Cattle, Sheep and Goat Parasites
Eggs and Larvae of Horse Parasites
Eggs and Larvae of Poultry Parasites
Spurious Parasites in the Feces of Animals
Anthelmintic Medication of Worms Outside the Digestive Tract
Anthelmintic Medication of Worms in the Lumen of the Digestive Tract
Treatment of Horse Parasites
Treatment of Cattle Parasites
Treatment of Sheep and Goat Parasites
Treatment of Swine Parasites
Treatment of Dog Parasites
Treatment of Cat Parasites
Treatment of Fox Parasites
Treatment of Poultry Parasites

Bound in cloth; profusely illustrated
Price, $1.00

Veterinary Magazine Corporation
4753 GRAND BLVD.
CHICAGO, ILL.

GRADUATING EXERCISES OF THE ONTARIO VETERINARY COLLEGE

The Spring examinations of the Ontario Veterinary College, Guelph, Ontario, were completed on April 30th with the following results.

The degree of Bachelor of Veterinary Science was conferred on May 1st at a special Convocation of the University of Toronto on fifteen graduates as follows:

G. Cairns, Guelph, Ontario.
G. A. Edge, Guelph, Ontario.
O. Hinton, Glencoe, Illinois.
P. J. Kelly, Osgoode, Ontario.
F. N. Marcellus, Guelph, Ontario.
F. MacLean, Guelph, Ontario.
J. O. McCoy, Success, Saskatchewan.
J. E. Patterson, Detroit, Michigan.
P. Priestley, Kerrobert, Saskatchewan.
W. J. Rumney, Victoria Harbour, Ontario.
A. D. Spooner, South Barre, Vermont.
H. E. Standen, Chippewa Lake, Ohio.
R. P. Swartz, Los Angeles, California.
W. J. Turnbull, Rathwell, Manitoba.
W. R. Wastrack, Princeton, Wisconsin.

HONORS AND PASS STANDING

Graduation Class

General Proficiency:
First Prize—Garth A. Edge.
Second Prize—Patrick J. Kelly.
Third Prize—F. N. Marcellus.
Honourable Mention—W. R. Wastrack, R. P. Swartz, W. J. Rumney, J. E. Patterson, F. MacLean, J. O. McCoy.

Bacteriology:
Special Prize—F. N. Marcellus.

The Helen Duncan McGilvray Honorarium:
Awarded to W. J. Rumney.

Canadian Army Veterinary Corps Honorarium:
Awarded to F. MacLean.

Third Year Class

General Proficiency:
First Prize—H. S. Smith.
Second Prize—F. J. Cote, L. Stevenson.
Third Prize—R. V. L. Walker.
Honourable Mention—J. Gillies, H. E. Burdick, R. Chapman, P. C. Underwood.
Pass Standing—G. C. Cilley, C. M. Hamilton, M. Lowrie, C. E. Reckin.

Canine Diseases:
Special Prize—F. J. Cote.

Second Year Class

General Proficiency:
First Prize—J. C. Bankier.
Second Prize—R. V. Westerberg.
Third Prize—H. P. Hamilton.
Honourable Mention—R. P. Dingman, J. R. Martell, F. M. Wheatley.

U. S. Gov't Seal furnished by the Government and applied under Federal Supervision

Government Legend

The same as

"Bottled in Bond"

ALL SIHLER DEPENDABLE PRODUCTS, produced under Gov't. License No. 24.

Bear U. S. Gov't. non-replaceable seals. Applied under federal supervision.

The THINKING VETERINARIAN knows he must use a dependable serum if he is to warrant the confidence of his clients and maintain his good reputation in the locality where he builds his practice.

Insist upon the U. S. Gov't seal for your PROTECTION!

SIHLER SERUM COMPANY 210 Central Avenue Kansas City, Kansas

Pass Standing—S. P. Giebelhaus, K. Ross, C. A. Skuce, C. M. Steen, J. C. Carey, J. R. Cattanach, J. E. Howard.

Anatomy:
Special Prize—J. C. Bankier.

Histology:
Special Prize—J. C. Bankier, R. V. Westerberg.

Canadian Army Veterinary Corps Honorarium:
Awarded to F. M. Wheatley.

First Year Class

General Proficiency:
First Prize—G. S. Muir.
Second Prize—A. A. Kingscote.
Third Prize—E. F. Peck.
Honourable Mention—H. R. Potter, H. G. Tully, F. Midwinter-Steane, P. J. G. Plummer, W. L. Grubb, C. E. Goodwin, J. T. Akins, A. A. White, H. A. Webb.
Pass Standing—W. L. Bendix, C. H. Bowyer, S. L. Catley, H. C. Collins, C. Dohner, W. H. Gear, C. F. Sprake, Mrs. E. B. Sprake.

Anatomy:
Special Prize—E. F. Peck.

Histology:
Special Prize—A. A. Kingscote.

Canadian Army Veterinary Corps Honorarium:
Awarded to G. S. Muir and F. Midwinter-Steane.

Dr. G. E. Middlehoff has completed the construction of a modern small animal hospital at Oroville, Cal.

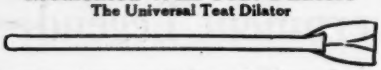
After an automobile tour of the South, Dr. N. C. Nicks of Collins, Iowa, has decided to locate at Selma, Ala., where he will establish a small animal hospital.

The city of Houston, Texas, has planned the construction of a hospital for stray dogs, with Dr. J. A. Phillips, city veterinarian, in charge.

Dr. John L. Beer of Chicago, is official veterinarian for the South Shore Country Club horse show, to be held at Chicago, June 10, 11, 12 and 13.

Dr. I. B. Boughton, formerly acting chief of animal pathology at the college of agriculture, University of Illinois, has been appointed director of the veterinary science department of Haiti.

Medicated Wax Teat Dilators
The Universal Teat Dilator



Prevents sore teats from healing closed. Always use in teats after operating. Never allow a cow's teat to gum shut or scab over. Medicated Wax Teat Dilators will prevent this. No trouble to keep them in teats between milkings. They are healing and antiseptic.
Price 100—$1.00; 500—$3.50; 1,000—$6.00; 5,000—$25.00 post paid.
MOORE BROS. Dept. V Albany, N. Y.

Dr. J. C. Hunt of London, Ohio, while treating a horse was bitten on the right hand, April 25th. It was later found that the horse was affected with rabies, and Dr. Hunt took the Pasteur treatment. It was supposed the horse had been bitten by a rabid dog.

Dr. H. J. F. Arundel, formerly at Bonifay, Fla., is now located at Norwood, Ohio.

Dr. George Palmer has moved from Boville to Orofino, Idaho.

Dr. H. C. Cram has changed his location from Wapello, Iowa, to Stuttgart, Ark.

Dr. G. C. Bevan has moved from Bellevue to Tipton, Iowa, where he is engaged in bovine tuberculosis eradication work.

Dr. A. G. Griesbach, formerly at Denver, Colo., gives his new address as Loveland, Colo.

Dr. W. E. Norden has moved from Avoca, Iowa, to Stromsburg, Neb.

The firm of Drs. Carver & McDaniel, Higginsville, Mo., was dissolved on February 1st, and Dr. McDaniel has moved to Lexington, Mo. The practice at Higginsville is being conducted by Dr. H. C. Carver.

Dr. P. L. Rouse, Union City, Pa., Secretary of the North Western Pennsylvania Veterinary Association, reports that a meeting was held at Erie, Pa., April 14th. Dr. Lodholz, Professor of Veterinary Physiology, University of Pennsylvania, was the principal speaker. Dr. J. W. Wright, Erie health officer, also described the work of his department in dairy inspection. The next meeting will be held at Exposition Park, Conneaut Lake, July 14th.

Dr. W. E. Hambleton of Scandia, Alberta, states he expects to retire from active practice in the near future.

Dr. W. E. Hollingsworth has changed his location from Lincoln to Louisville, Ala.

Dr. H. E. Wimer has moved from Eagle, Idaho, to Salem, Oregon.

Dr. T. E. Palmer is now located at Toledo, Ill. He was formerly at West Salem, Ill.

Dr. George I. Smith. after spending a few weeks in the Colorado mountains, states that his health is very much improved and he expects to resume practice. His present address is Denver, Colo. For a time he was at Roswell, N. M., having moved there from Elgin, Kansas, last fall.

Dr. L. T. Langland is now at Sioux City, Iowa, his former location being Waterloo, Iowa.

Dr. M. E. Hartley has moved from Quaker City to Raymond, Ohio.

Dr. Lloyd Donnell has changed his location from Scircleville to Stockwell, Ind.

According to Dr. C. A. Cary, State Veterinarian of Alabama, the application of the tuberculin test to 30,000 head of cattle in the state during the past year, showed less than one per cent affected with tuberculosis. Dr. Cary recently got the state board of agriculture to adopt some changes in the technical regulations governing the testing of cattle, among which was a provision that stray cattle crossing the state line into Alabama may be subjected to the tuberculin test.

An outbreak of rabies was reported at Indian Valley and Cambridge, Idaho, early in April. Newspapers in that section urged the preventive inoculation of dogs against the disease, announcing that local veterinarians would administer the prophylaxis at a cost of $2.50 per animal.

Dr. C. C. Rayfield, formerly at Birmingham, Ala., has changed his location to Notasulga, Ala.

Dr. C. W. McIntosh has moved from Toronto to Ottawa, Ontario.

CLASSIFIED ADVERTISEMENTS

For Sale, Wanted, etc., $2.00 for 25 words or less; additional words, 8 cents. 25 cents extra when replies are sent care of the journal.

FOR SALE—WANTED

"QUICK COLLECTIONS"—Everywhere. Live wire firm! Established 31 years. William H. Dodd, 87 Nassau St., New York. Don't wait, send us your bills today!

BETTER PRINTING for less money. Send for free samples of letterheads, envelopes, circulars, booklets, cards, etc. They will save you money. Fantus Co., 525 So. Dearborn St., Chicago.

FER-SUL AND FER-SUL-INE—make a good side line for salesman visiting veterinarians. Address, The Westmoreland Chemical & Color Company, 22nd & Westmoreland Streets, Philadelphia.

VETERINARY PRACTICES, POSITIONS, ETC., furnished and handled for sale in 48 states. Physicians, dentists and nurses furnished and located. Drug stores for sale and drug positions in all states. F. V. Kniest, Peters Trust Bldg., Omaha, Neb. Established 1904.

PASTEUR VACCINE LABORATORIES' World Renowned Anthrax and Blackleg Vaccines. Salesmen wanted; commission basis. Write to United States and Canadian General Agent: Charklian, 500 Fifth Avenue, New York City.

FOR SALE—Veterinary practice in an eastern city. One of the best. Established since 1897. Horses, cows and dogs. Small animal hospital. Buyer can pay so much down and rent hospital. Splendid opportunity for a good veterinarian. Address 831, care Veterinary Medicine, 4753 Grand Blvd., Chicago, Ill.

POSITION WANTED—Graduate veterinarian desires position. Thirty-four. Special scientific and business training. Will gladly correspond with interested parties. Address 827, care Veterinary Medicine, 4753 Grand Blvd., Chicago, Ill.

WANTED—Veterinarians to act in sales capacity calling on the profession in Iowa. Illinois and Nebraska territories. Shores-Mueller Co., Cedar Rapids, Iowa.

FOR SALE—In Tennessee, large practice and equipment for less than equipment can be replaced. Address 828, care Veterinary Medicine, 4753 Grand Blvd., Chicago, Ill.

LOCATIONS in South Dakota for three or four good veterinary practitioners. For particulars, address 829, care Veterinary Medicine, 4753 Grand Blvd., Chicago, Ill.

FOR SALE—Best located modern dog and cat hospital in Chicago, Ill. Large outside practice with good percentage of horse work. This is a good opportunity for the right party, as Chicago is still the best veterinary city in the country. Address 830, care Veterinary Medicine, 4753 Grand Blvd., Chicago, Ill.

WANTED—Back numbers of Veterinary Medicine for August and September, 1924, March, 1925. Subscriptions extended one month for each copy received. Address Veterinary Medicine, 4753 Grand Blvd., Chicago, Ill.

Pammel's

Manual of Poisonous Plants

$10.00 plus Postage and Insurance
Address orders to

PROFESSOR L. H. PAMMEL

Iowa State College, Ames, Iowa

BLOOD PRESSURE APPARATUS
FOR DOGS

Essential to successful canine practice.
Indispensable for physical examinations.
Necessary to interpretation of the main functional symptom of diseases in dogs.

Complete Mercury Instrument with
2 sleeves $49.50
Complete Aneroid Instrument with
2 sleeves 35.50
Sleeves only (large or small)..... 8.00

J. G. HORNING
P. O. Box 1395 HOUSTON, TEXAS

Mailing-Lists

Will help you increase sales
Send for FREE catalog giving counts and prices on thousands of classified names of your best prospective customers—National, State and Local—Individuals, Professions, Business Concerns.

99% Guaranteed by refund of 5¢ each

ROSS-Gould Co. 313 N. 10th St. St. Louis

Coopers Saponified Cresol Solution

COOPER GUARANTEED PRODUCT

(50% Cresol)

The dependable disinfectant for cleaning up after your tuberculin tests.

Officially approved substitute for Liquor Cresolis Compositus in disinfection work under B. A. I. or State Control.

Always of uniform strength.

Always priced right.

William Cooper & Nephews, Inc.
152 West Huron St.
CHICAGO

FISTULA OF THE WITHERS AND POLL EVIL SUCCESSFULLY TREATED WITH FISTONE

Over a thousand veterinarians in the United States and Canada are using FISTONE as an internal treatment for fistula of the withers, poll evil and other chronic suppurative conditions.

Indorsed by the following well known veterinarians:

Dr. Earl B. Leneker, Cherry Valley, N. Y.
Dr. G. O. Smith, Ligonier, Ind.
Dr. E. W. Newhalfen, Assistant State Veterinarian, Henry, Ill.
Dr. O. A. Nelson, Advance, Ind.
Dr. C. M. Burge, Logansport, Ind.
Dr. J. S. Robertson, Cortland, Nebr.
Dr. Adrian A. Martin, Emmitsburg, Maryland.
Dr. J. H. Danforth, Genoa, Ill.

FISTULA OF THE WITHERS AND POLL EVIL
Successfully Treated with FISTONE

Eight-year-old bay gelding with an old case of fistula of the withers, which had been operated on two or three times without success; swelling large, hard and discharging pus from three openings. It was decided by Dr. L. A. Merillat that an operation would do no good in this case.

Treatment was begun on January 14, 1924, by feeding FISTONE in bran and oats morning and evening. April 1, 1924, this case was pronounced by Doctor Merillat in perfect condition with no evidence of a fistula remaining. (The case was treated at the Indiana Veterinary College, Indianapolis, Ind.)

Price ½ Doz., $5.00; 1 Doz., $10.00, Postpaid

To Introduce Fistone

Beyond the sphere wherein its merits are not disputed, we will send you a dozen boxes (12 ounces each) once only on receipt of your professional card or stationery and $8.00.

COUPON

Fistone and Appliance Company,
College Corner, Ohio.

Enclosed find check for $8.00 for which send me One Dozen, 12-ounce boxes of FISTONE, "An Internal Treatment for Fistula of the Withers, Poll-Evil, Quittor and other Chronic Suppurations."

Dr.....

Address.....

Send for illustrated literature of Dr. C. A. Clark's Automatic Sanitary Operating Table for Vaccinating Swine.

At a meeting of city and county officials at Evansville, Ind., April 3rd, it was decided to ask for an appropriation to hire a county veterinarian who will test all the herds in Vanderburgh county at frequent intervals for tuberculosis.

Dr. W. M. Kyle recently erected a veterinary hospital near his home at Lebanon, Ill.

Dr. A. A. Hermann of Denver, Colo., according to a report in the Denver Post of April 5th, performed an operation on a toy poodle to remove a coin which it had swallowed. The coin proved to be a copper cent, which was successfully removed and the dog made a good recovery.

Dr. J. W. Creamer, who had been in practice for 26 years at Portland, Oregon, recently located at Hood River, in the same state.

Dr. K. W. Stouder of the Extension Service, Iowa State College, gave a talk on livestock diseases and sanitation to the students in the agricultural class of the high school at Stanwood, Iowa, April 2nd.

Drs. L. P. Scott, L. F. Bacon, J. C. Barta and C. B. Strain were official veterinarians of the first annual bench show of the Cedar Valley Kennel club, at Waterloo, Iowa, April 24th and 25th. Dr. L. F. Bacon of Cedar Falls, is president of the club. More than 500 dogs were entered in the show, and prizes to the value of $750 were awarded winners.

Dr. Geo. W. Patton of Bessemer, Ala., died of aortic aneurism, March 19th, and was buried at Shandon, Ohio. He was 70 years of age and a graduate of the Cincinnati Veterinary College, class of 1913. He is survived by his wife, one daughter, Mrs. R. V. Hazelwood, and two brothers, Alvin and James of Cincinnati, Ohio. His son-in-law, Dr. Robt. V. Hazelwood, is engaged in veterinary practice at Bessemer, Ala.

Dr. Bailey E. Chaney recently located for practice at Nacogdoches, Texas. He is a graduate of the Louisiana State University and the Chicago Veterinary College. He was formerly located at Corpus Christi, Texas, where he served as city milk and meat inspector from 1912 to 1916.

The new members of the Texas veterinary examining board met at Ft. Worth, April 6th, and the following officers were elected: Dr. M. A. Gleason, San Antonio, president; Dr. W. R. Sanderson, Brownwood, vice president; Dr. R. G. Flowers, Ft. Worth, secretary-treasurer. Dr. Flowers announced that the first examination by the board will be held early in June at College Station.

Dr. D. C. Peebles, who had been in practice at Blair, Neb., for a number of years, has accepted a position as veterinarian in the U. S. B. A. I. and is stationed at Kansas City, where he began work May 1st.

Governor Donahey of Ohio, on April 13th, signed the Riggs bill extending the area plan of testing cattle for tuberculosis. The measure provides that when 75 per cent of the owners of cattle in a township or county petition the state for tuberculin testing, state representatives will make the test, and place under quarantine cattle owned by the other 25 per cent. When a total of 90 per cent have been tested, the remaining owners must submit their cattle for test also.

Dr. Clarence Upton has changed his location from Evansville, Ind., to Albany, N. Y.

Dr. Harry Shepard of Killeen, Texas, reports that he has been very busy lately combating an outbreak of rabies. He also has been active in presenting an ordinance to the city council for rabies prophylaxis.

Dr. James F. Adee has changed his location from Stanberry, Mo., to Topeka, Kansas, where he was recently appointed city milk and meat inspector.

Dr. Robert E. Prior of Benton City, Wash., on April 10th, was appointed state supervisor of dairies and livestock to succeed Dr. L. C. Pelton. Dr. Prior is a graduate of the Washington State College. Following his graduation in 1913, he practiced at Yakima, Wash. In 1918 he sold his practice to Dr. Peter Mackintosh to take active charge of the Prior ranch. He has been a sheep raiser for the past several years, and is well known among stockmen throughout the northwest. He took charge of his new office April 20th. Dr. Pelton, the retiring official, has been with the department eight years, three of which were spent in field inspection work and five as supervisor.

Have You Obtained Your *Strasco Case*

Write for Complete Description with Prices

R. J. STRASENBURGH CO.
Manufacturing Chemists
ROCHESTER NEW YORK

Dr. Joseph Kaiser, veterinarian for the Hawthorne race track, Chicago, has accumulated an extensive collection of wild mallard ducks, wood ducks, Canadian geese and various other birds, which will add to the attractiveness of the surroundings at Heart Lake.

According to Dr. R. V. Rafnel, veterinarian in charge of anthrax control in Mississippi, the practicing veterinarians throughout the anthrax area have been designated as deputy state veterinarians to act for the Mississippi State Livestock Sanitary Board in quarantine control measures. The B. A. I. veterinarians assigned to anthrax control, together with the practitioners have stimulated an interest in early vaccination of livestock, and in practically all of the notorious anthrax district this work has gone forward steadily. Up to April 10th, about 60 deaths of horses and mules from anthrax had been reported. In most instances anthrax immunization is being done by qualified veterinarians, but in some counties the agricultural agent is assisting in this work.

Dr. Harold G. Nelson has moved from Clinton Corners to Kingston, N. Y.

Dr. H. D. Lohnis recently located for practice at Rice Lake, Wis. He was formerly at Bloomer, Wis.

Dr. Wm. Christie has changed his location from Bristow to Nowata, Okla.

Dr. George M. Crawford, of Fresno, Cal., died at his home, April 9th. The funeral was conducted by the Masonic order of which Dr. Crawford was a member. He also belonged to the Brotherhood of Railway Trainmen. He is survived by a wife, a son, four brothers and two sisters.

Dr. Herman F. Blohm, born in Germany 85 years ago, died at Ferndale, Humboldt county, Cal., April 5th. He had formerly resided at Watsonville, Cal., where the funeral was held. He is survived by five daughters, two sons, twenty-three grandchildren and fourteen great grandchildren.

Dr. William F. Eagan, for more than twenty-six years veterinarian for the fire department of San Francisco, Cal., obtained a judgment from the state District Court of Appeal, April 14th, compelling the fire pension fund commissioners to retire him on a pension of $50.00 a month. The commissioners contended that, as Dr. Eagan did not devote his entire time to his office, as required by the department regulations, he was not entitled to a pension. The Appellate Court, however, held that while this might have subjected him to dismissal for disobedience during his service, it could not be taken advantage of to bar his pension.

Dr. F. K. Hansen of Marquette, Mich., described in a local paper a simple method of making an efficient hog oiler, consisting of a post set in the ground and wrapped with burlap or rope smeared with some non-irritating grease or oil, such as mica axle grease. The hogs will rub against it, thus greasing their bodies and protecting them from lice and skin diseases.

Dr. Clifford Ackley of Winlock, Washington for seven years a state veterinary inspector, re signed May 1st. Doctor Ackley's resignatio followed the removal of his chief, Dr. L. C Pelton, who was succeeded by Dr. Robt. Prio of Yakima, April 20th.

Dr. H. F. Crooks recently purchased the practice of Dr. H. P. Gray at Chilhowie, Mo.

It Will Pay You

To Feed and Prescribe

KEN-L-RATION

and

HEMO-RATION

(In Cans)

The Dog Foods Supreme

BECAUSE these meat and cereal foods require no preparation whatever,—just open the can and feed.

BECAUSE they are literally full of vitamines and bone building elements.

BECAUSE they give satisfaction to the veterinarian, and satisfaction to the owner of the patient,—hence profitable to feed, and profitable to prescribe.

A pound sample gladly furnished free upon request

CHAPPELL BROS., Inc. **ROCKFORD, ILL., U. S. A.**

The M. D. s

WHY NOT

The D. V. M. s ?

After five years of extensive and critical use

MERCUROCHROME-220 SOLUBLE H. W. & D.

has become established as one of the most useful germicides in medical practice. In the last two years it has gone far toward

REPLACING TINCTURE OF IODINE

as a

GENERAL ANTISEPTIC

It stains as Iodine does, but it does not burn, irritate or injure tissue. Veterinarians everywhere are becoming interested in Mercurochrome and are already reporting on its efficiency for their purposes. Just remember it will do all that Iodine will as a germicide and will not burn, irritate or injure tissues.

WRITE US FOR INFORMATION

HYNSON, WESTCOTT & DUNNING

BALTIMORE

Dr. A. W. James of Cameron, Mo., recently completed the building of a new office in connection with his hospital.

Dr. R. C. Surface of Gallatin, Mo., became general manager of the American Veterinary Supply Co., Kansas City, Mo., last April. Dr. Surface was chief owner of the Farmers Veterinary Supply Co. at Gallatin, and this concern has been merged with the Kansas City company.

Dr. Jacob Traum of the University of California, Dr. Peter K. Olitsky of the Rockefeller Institute, and Dr. Harry W. Schoening of the U. S. B. A. I., left early in May for Europe where they will study foot-and-mouth disease, expecting to spend a year or more on this work under the direction of the U. S. Department of Agriculture.

Dr. C. P. Lamb of Brush, Colo., reported that botulism was prevalent among horses in Morgan county, Colorado, early this spring.

Dr. Raymond Zenor of Fruita, Colo., is contracting with farmers and stockmen to treat sick or injured stock at 75 cents per head per year. The owners of the stock agree to pay for all drugs and a mileage fee of 12½ cents per mile. The number and kind of stock must be listed with the doctor at the time of signing the contract. A bond equal to the amount subscribed is given by Dr. Zenor as a guarantee of performance of contract. It is reported that the agreement is meeting with favor among owners of livestock.

Dr. George W. Hill, veterinarian, was placed in temporary charge of the city filtration plant of the water department at Topeka, Kans., following the discharge of the sanitary engineer, April 16th.

Dr. C. H. Hartman has changed his location from Mt. Hope to Haven, Kansas.

Dr. C. A. Trapkey of Knightstown, Ind., recently accepted a position with the Standard Oil Company of Indiana as field lecturer. His duty is to demonstrate the usefulness of the company's products to salesmen in forty counties, and they in turn will use these selling arguments on the buying public. Dr. Trapkey had

Antiphlogistine

Is a Valuable Aid to Veterinarians in

EQUINE BOVINE CANINE FELINE PRACTICE

MASTITIS
PNEUMONIA
TENDINITIS
SPRAINS
SCRATCHES
ORCHITIS
CAPPED KNEE
INFLATED GLANDS
ABSCESSES
BRUISES
BURNS
BOG SPAVIN
HARNESS GALLS

Yield Promptly to

ANTIPHLOGISTINE

Applied Hot and Thick and Covered With Cotton

Send for Booklet and Sample

The Denver Chemical Mfg. Co.
New York

considerable experience in giving lectures and demonstrations while in the army at Ft. Meade, Md., in 1917 and 1918.

RECOGNITION FOR RAFFENSPERGER

Dr. H. B. Raffensperger, widely known for his connection with the McLean county plan for the control of parasites in swine, has been elected an active member of the American Society of Parasitologists. Dr. W. W. Cort of Johns Hopkins University is secretary of the society.

It is reported that Major R. J. Foster, now at Ft. Riley, Kansas, will go to Hawaii for duty in February of next year.

The bovine tuberculosis bill in the Illinois legislature passed the House with only two dissenting votes, April 29th. The bill provides that when 75 per cent of the cattle in a county have been tested voluntarily, the remaining 25 per cent will be required to test. After two years all cows that are brought into the state will have to stand a 60-day retest.

The first national poultry congress will be held in Chicago during the week of September 21st. The historical development of the poultry industry will be reviewed in all of its phases, including production, marketing and the development of allied industries. The second objective of the congress will be to study the present trend of the industry and its immediate needs.

ILLINOIS MEETING IN JULY

Dr. F. R. Whipple, president of the Peoria Valley Veterinary Association, having charge of local arrangements for the coming meeting of the Illinois State Veterinary Medical Association to be held at Peoria, July 8th and 9th, has announced that preparations are being made for one of the greatest meetings in the history of the organization. Interesting material is being arranged for the clinic, Dr. Whipple stating that horses, cattle, swine, dogs, cats and poultry will be furnished for the demonstrations. An unusual dinner is also being planned to be given in one of the city parks and the local committee advises those who attend to "take a tip from our cook and punch a few extra holes in the free end of your belt—it will be necessary to ease up the belt tension after the spread." Further details of the program will be issued by the association at an early date.